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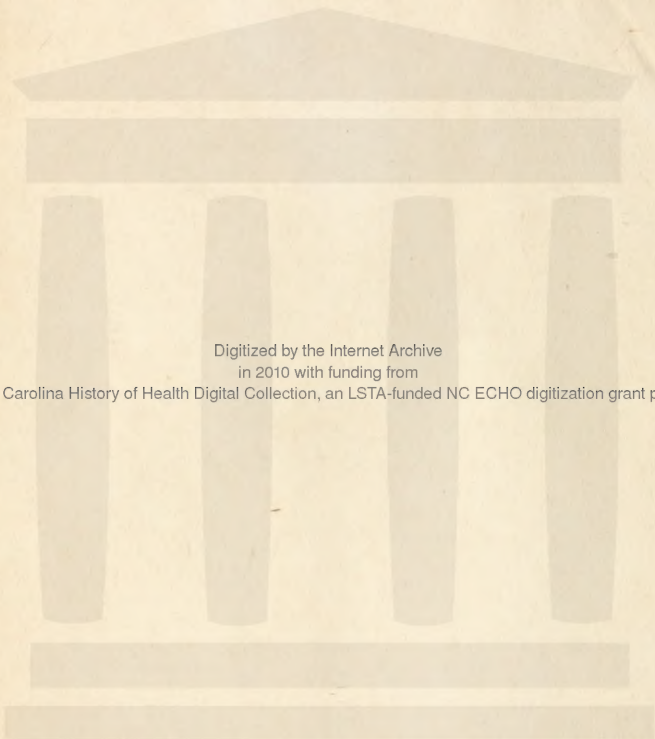
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No. 1.

SURGERY OF THE THYROID GLAND.*

By Dr. J. T. Burrus, High Point, N. C.

The natural tendency of a goitre is to increase in size, and because of this fact it is to be seriously considered. By pressure on the trachea, blood vessels or nerves, a goitre may interfere materially with the act of respiration or heart action. It may also produce a thyrotoxicosis. It may undergo tissue changes, resulting in tumor formation, and may ultimately become malignant. It may begin as a malignant tumor. For the above stated reasons treatment of goitre is important.

It is the opinion of the writer that all cases in which the thyroid gland is noticeably enlarged and produces the slightest constitutional symptoms should be treated surgically before the more advanced symptoms develop.

The mortality rate in cases so treated is very low, and the results are generally excellent.

Warbasse says operation is indicated in the presence of:

- (1) Pressure symptoms.
- (2) Nodular goitre.
- (3) Rapidly growing goitre.
- (4) Painful goitre.
- (5) Goitre extending into the thorax, when delay would make necessary a more serious operation.
- (6) Goitre which produces thyrotoxicosis.
- (7) Colloid goitre.
- (8) Continued enlargement in spite of other treatment.
- (9) Distress because of unsightliness.

It would appear from the above mentioned author's statement that practically all goitres are surgical and should be considered and treated as such.

The same author gives, however, his indications for medical treatment. These are:

- (1) Extreme impairment of general health.
- (2) Great damage to the heart.
- (3) Small and receding goitres.
- (4) Absence of all the above stated indications for operation.

According to Plummer, a simple *colloid* goitre is *never* surgical. He says Thyroxin intravenously will reduce it in 24 to 48 hours. Many goitres that appear to be colloid are mixed, i. e. contain adenomatous areas and these *are* surgical. Sometimes shrinking colloid with Thyroxin gives the diagnosis by making small adenomatous areas palpable.

Making use of the experience and teachings of Halstead, Mayo, Crile, Warbasse, Crotti and many others, surgery of the thyroid gland, if done early, affords as beautiful and satisfactory end results as surgery of any part of the body. The technic has improved wonderfully and we no longer grope our way in darkness. With the light given us by these men we know what to do, when to do it, and what to expect, each surgeon putting into the work his own individuality, which shows some divergence in detail but no fundamental difference in principles. These principles must be aimed at if one wishes to obtain good operative results.

A few years ago surgeons were satisfied to remove the gland in most cases; but not so today. We must protect the patient, guarding against the removal of too much of the gland, or of too little, making sure that symptoms of recurrence do not appear. The critical public must be satisfied and the

*Read before Section on Surgery at the annual meeting of the North Carolina Medical Society at Asheville, N. C., April 17-19, '23.

esthetic taste of patient and friends necessarily considered.

To do thyroid surgery it is necessary to have with us at all times a knowledge of the following important anatomical facts:

(1) Thorough familiarity with the structure of the thyroid is essential.

(2) The parathyroids and the inferior laryngeal nerve must be uninjured.

(3) It is necessary to leave enough thyroid tissue to protect the patient against future hypothyroidism.

(4) One must remove enough of the gland to protect the patient against further hyperthyroidism.

(5) It is important to obtain as nearly an invisible scar as possible.

(6) It is desirable to shape the neck so as to render it pleasing to the esthetic sense.

Operative treatment consists of:

(1) Excision.

(2) Resection.

(3) Enucleation of the thyroid gland.

(4) Ligation of the superior and inferior poles, one or both.

The man who does thyroid surgery must have a knowledge of different methods in order to meet any emergency that may arise, applying that surgical technic necessary for the particular case that confronts him. Shall excision, resection, or ligation, or a combination of these, be employed? These are the questions one asks himself when each case is presented.

Kocher used the term excision in speaking of the complete removal of the posterior portion of the gland and enters into the discussion of this in very great detail. When bilateral or unilateral lobectomy is used, the term resection is applied. This applies to cases in which a portion of the thyroid gland is left, which is done in order not to invade the territory in close proximity to the parathyroids and the inferior laryngeal nerves.

It is my observation that most men in this country are doing an intracapsular excision, in removing the thyroid gland. This method has been looked upon as safe and by its use there are

few instances in which the laryngeal nerve or the parathyroids have been injured.

Bilateral resection is the method of choice when it can be done. By this, the entire gland may be exposed, lessening the danger of injury to the parathyroids and the inferior laryngeal nerve; and, from the esthetic point of view permitting a better result.

In each case the question arises as to how much thyroid tissue can safely be removed. Those who are familiar with this subject and have had the largest experience differ greatly in their opinion. Some remove all excepting a few grams, by weight; and others say that one-half the thyroid gland should be left. It appears to me that every surgeon has his own idea, developed as a result of his experience, as to just how much of the gland should be left. It has been the writer's plan to remove all but a very small part of the posterior portion of each gland, leaving a portion no larger than the size of an English walnut on each side.

When, as in a few cases, unilateral thyroidectomy has been done, the entire lobe is removed. I have never seen symptoms of hypothyroidism develop; and this statement is made after handling more than one hundred cases.

If a small amount of the gland is left, a compensatory hypertrophy takes place, sufficient to prevent myxedema. It is obvious, however, that no theoretical rule can be applied to every case.

Ligation of the superior and inferior poles of the thyroid gland has only been done, in so far as I know, as a preliminary operation for later thyroidectomy and is resorted to in those cases which have advanced so far that a thyroidectomy can not be safely undertaken. This, of course, is done to diminish the blood supply to the gland, and to check its secretive power and cause atrophy of the gland and a thickening of its capsule. The ligation of the superior pole is the method of choice and in most cases which have been handled by me has only been done for the amelior-

ation of the patient's symptoms, and with the view of a later thyroidectomy.

In advanced cases it is better to ligate one pole and then after the reactionary symptoms have subsided to ligate the opposite side. It is distressing that these patients can not be seen earlier, in which cases ligation would not be necessary, thyroidectomy being far more preferable.

As an aid in surgery of the thyroid, study of the basal metabolic rate is of importance, and when carefully estimated is of great value.

In conclusion, it is not the purpose to describe the operative technic, as we are all in possession of text books which elaborately and clearly enter into this subject.

ACUTE MASTOIDITIS.*

Louis Nelson West, M.D., Raleigh, N. C.

In writing on acute Mastoiditis I have taken into consideration the many sides of this question and the limited time for this paper, and I am mindful of the many diagnostic points that you are all familiar with. I realize fully that volumes can be written on almost any symptom alone, and I also fully realize that after all is said and done, the question "When to operate?", is I think the hardest we have to decide.

Therefore, I am really reviewing for you the subject in high spots plus some laboratory aid that I have found helpful in my cases.

In the ordinary form of acute Mastoiditis we are dealing with a more or less self-limited disease, so we may expect the average case to get well; and in other cases—though they may present more or less alarming symptoms—will effect a spontaneous cure without operation. However safe and sane this practice of "watchful waiting" may be in the hands of an expert aurist I believe it to be a most dangerous proce-

dure to follow as a routine.

I do not want to be understood as advocating Mastoid operation in cases of acute mastoiditis without first trying every effort for their non-surgical relief; but I do want to leave with you the fact that modern aseptic surgery has rendered the mastoid operation performed early, the most successful procedure in all surgery, and furthermore, surgical interference will not only prevent various intracranial complications in almost all instances, but will assuredly preserve the hearing—a function of the ear that is so often overlooked from the standpoint of prognosis. The importance of Mastoiditis will be better appreciated when the profession recognizes the fact that the mucosa lining the mastoid antrum and cells is in every case involved with the middle ear suppuration, and perhaps to the same degree. The anatomical situation of the mastoid subjects it to the infections from the naso-pharynx via the Eustachian tube; the lining of the tube, the middle ear and mastoid is continuous; therefore, practically all cases of mastoiditis are direct extension from the naso-pharynx.

Mastoiditis is more frequent in children, for the reason that the Eustachian tube is shorter and the naso-pharynx is filled with adenoid vegetation—which subjects the child to more naso-pharyngeal inflammation. The acute infectious diseases in children would not cause mastoiditis as often as they do, were it not for the fact that these diseases are always accompanied by inflammation of the mucous membranes in this region; these infections get through the Eustachian tube in spite of the ciliated epithelium which tries hard to prevent ascending infections. Now (accepting that the infection is ascending from the nose and throat), the tube is first involved; then the middle ear; and then the mastoid. If the drainage is ample, the aditus remains patulous and the opening in the drum head large enough, free drainage is provided and the symptoms rapidly subside and recovery quickly follows in the average case. On the other hand, however,

*Read before the Wake County (N. C.) Medical Society.

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when drainage is obstructed and the infection is virulent, the mucous membrane becomes macerated from pressure and exposes the underlying bone to micro-organisms; and recovery here will only take place after posterior drainage or—in other words—the mastoid operation.

The mastoid operation is recorded as being done as early as 1649; but not until 1861 was it done in America. Since that time (and chiefly in the last few years) we have made wonderful improvements in technique and surgical judgment; but we have not achieved the success that we should have, in considering the wide educational campaign in recent years on pathologic otology. Some of us still adhere to the belief of generations ago that it is unwise to interfere with a running ear; and daily we see patients that have been advised—not only by their friends, but at times by their doctor—to leave the running ear alone, and the child will outgrow it.

It is a hard matter—with all the aid that we have—to tell correctly at all times when a mastoid will have a spontaneous cure, or when it should be operated. It does not require any skill to diagnose a case of mastoiditis that has been neglected so long that erosion has taken place through the cortex—with the resulting accumulation of pus under the periosteum and the ear pushed forward; but it does require judgment to decide *early* when a mastoid should be operated *and a reasonably early decision should be made*. Our decision should be based upon all of the signs and symptoms that the patient presents, plus the aid of the bacteriological examination of the discharge, the blood examination and the X-ray; and not by any one symptom or sign or any one laboratory examination should this decision be made in the early stages of mastoiditis. The beginning of mastoiditis, the symptoms and signs are those of nearly all acute infections—chiefly, pain, fever, tenderness behind the ear and a discharging ear; after the acute symptoms have subsided the temperature will come to normal and the patient usually goes about his work with no symptoms other than

a discharge from the ear, yet this case may be hopelessly involved. Still, some of these cases (after weeks and weeks) clear up; but all the time you are waiting for this to happen your patient is in danger of the infection spreading inwardly with the resulting meningitis, sinus thrombosis and brain abscess.

It is the opinion of nearly all aurists—and it is certainly my opinion—that any profuse discharge from the ear, a discharge that you know by its quantity that it cannot possibly be generated in the small tympanic cavity (and, therefore, must be coming from the mastoid), that has lasted over three weeks (without improvement), should be subjected to a simple mastoid operation. It is a simple operation (as the name implies) at this stage—and it will surely stop the discharge and save the hearing and, at the same time, prevent (in nearly all cases) the complications that so frequently arise from discharging ears.

Drooping of the superior posterior wall is (in the opinion of nearly all aurists) an unfailing sign of mastoiditis and—in nearly all cases—requires an operation; but if the tip of the mastoid be the only part of the mastoid involved, this sign will not be present; yet the case will require operation just as urgently. We have learned to rely (in recent years) upon X-ray photographs of the mastoid, and this should be done in all cases; and—rightly interpreted—are of inestimable value; but operation here should not be decided by the picture alone. Nearly all cases of acute otitis media will show some cloudiness of the mastoid, but there is a difference between cloudiness and bone destruction and even pus in the mastoid. Accurate knowledge of anatomy and pathology, the tone value of the plates, and the knowledge of the X-ray machine itself must be combined to make the opinion of real worth. The X-ray not only gives you this aid, but it will at all times locate for you the sinus, and by knowing this, the operation can be more quickly performed and without risk of injury to this structure.

In treating mastoiditis—or as an aid in diagnosis—the blood count is of great

importance. A high leucocytosis indicates the patient's resistance to the disease; a high polymorphonuclear percentage represents the severity of the infection. Therefore, if these remain the same ratio towards each other, the protection of the leucocytosis is sufficient to counteract the destructive action of the polymorphonuclear. If, on the other hand, the leucocytes decrease and the polys increase, the progress of the disease is not good; and the patient will probably come to operation. Should the leucocytes remain high and the polys decrease we can record a favorable change.

If the mastoid comes to operation, a culture should always be taken—to further check the predominating organism; we know that the streptococcus in its different strains is present in nearly all complicated cases—the less virulent bacteria usually have uneventful recovery. I can recall two cases that I have had, if it was not for the recorded staphylococcus infection, I would have probably opened the sinus. Both cases that I refer to developed several days after operation—a very high septic temperature with chills. In one case I found in the blood examination, malaria; and in the other, the patient just got well by waiting.

Now, in closing, let me remind you of what I have said in regard to the anatomy of the middle ear, mastoid and Eustachian tube; and, remember that the chief treatment for mastoiditis is preventative—and all the prevention that I know of, after the middle ear has become invaded, is early and free opening of the tympanic membrane.

SOME EARLY SIGNS OF PERNICIOUS ANAEMIA.*

D. Heath Nisbet, M.D., Charlotte, N. C.

The object of this report is not to bring out anything new, but to emphasize a few facts, which are well known

to all of us, but which we often do not consider in the correct way. It is important that we realize that pernicious anaemia parades under many colors; that its signs and symptoms are many and varied, and that they are often hidden in a complex of other complaints. Many of us, I am sure, had considered it a blood disease, and had thought that a typical blood picture, with low red cell count, high color index, nucleated red cells, and changes in size and shape of red cells, were necessary to make an accurate diagnosis. This picture is present in about one-third of the cases only.

I wish to call to your attention the four most common ways in which it may appear and to cite a case illustrating one of them. First, the type where the blood picture, as above described, is the leading picture. Second, the nervous symptoms, as numbness, and tingling of the extremities, and those peculiar to combined sclerosis and the other disturbances of the superficial and deep sensations, are present. Third, the gastro-intestinal, with the sore and ulcerated tongue, sore mouth, and achylia gastrica. Fourth, a combination of any of the three mentioned above. From this, we can see that we have a disease (the cause of which is unknown), which is of peculiar interest to the general practitioner, the neurologist, the gastroenterologist, and to the surgeon, especially from the treatment side.

It is my purpose to emphasize briefly the third mentioned or gastro-intestinal group of symptoms. In reviewing the histories of all the cases he had seen in 25 years of practice, Hunter, of London, said, "The particular lesion, which more than any other, I find to be the most distinctive of the hemolytic disease pernicious anaemia, is the presence of a peculiar form of sore tongue in a patient suffering with anaemia." Henry Christian advises us that pernicious anaemia should not be considered as a blood disease, but as a general disease in which the blood and blood forming organs, among other tissues, are involved, and further that it should be recognized that it is not the occurrence of any particular kind of gastro-intestinal disturb-

*Read before Mecklenburg Medical Society, June 5, 1923.

ance that is suggestive of pernicious anaemia, but that it is important to realize that most cases of pernicious anaemia have some gastro-intestinal disturbance, and these disturbances form a definite part of the picture of pernicious anaemia.

No hard and fast rule can be followed in describing the tongue in this disease. Examination reveals a red, beefy, tender organ with patches of redness, many small vesicles and in the later stages it is pale, glistening, bald, has a scaldy feeling with impaired sense of taste. The tip, anterior portion of the top and edges are most usually involved. The important point to consider is that, given a case complaining of sore tongue, alone or with other symptoms, it is important to consider pernicious anaemia and have the blood examined, and above all to follow the case and watch developments. This is well illustrated in the case I am reporting.

The second point of importance is the absence of free hydrochloric acid in the gastric contents. Levine and Ladd in the Johns Hopkins Medical Bulletin (Aug. 1921) report a study of 150 consecutive cases of pernicious anaemia, with special reference to gastric anacidity. In 143 gastric analyses which were made, 140 showed no free hydrochloric acid, of the remaining three, two were doubtful pernicious anaemia, leaving one, or 0.95 per cent where free HCL was present. This change in the gastric secretion often antedates by years the changes in the blood and is not altered by remissions. As to changes in the tongue in the above series, records were available on 127 cases. 82 were typical, that is, smooth, glistening, pale with atrophy of the papillae; 24 were suspicious and 21 normal. In my case sore tongue was certainly the first symptom to appear and there was absence of free hydrochloric acid at all examinations.

Report of Case.

Mrs. J., age 40, first seen April 15, 1920. Negative family history. Had typhoid fever 1897. Perineal tear 1909, not repaired as had no symptoms. No pneumonia, rheumatism, influenza, ma-

laria, or jaundice. Periods regular and without pain or discomfort.

Present illness began in 1918, when she had several attacks of sore tongue and mouth. The tongue had a scaldy feeling, and showed small red pimples; acid fruits and warm foods caused burning. This would last from four days to two weeks and disappear. The attacks came about five times in the past year.

Physical examination: Well developed and fairly nourished. Skin somewhat dull. Pupils equal, regular, react to light and accommodation. Sclerae clear. Nose and ears negative externally. Tongue a pinkish red color with numerous raised, red, pin point papules, on the edges and anterior half of top, and extending to inner side of lower lip. Tonsils negative. No glandular enlargement. Heart normal size, sounds regular, no murmurs. Lungs clear and resonant throughout. Abdomen no masses, tenderness or spasm. Liver and spleen not palpable. Knee jerks equal and active.

Laboratory. Urine negative for albumen, sugar or casts. Stool, no amoebae, parasites or ova. Fractional stomach analysis, no free hydrochloric acid. No occult blood. Blood Wasserman negative. Haemoglobin 65 per cent. Red cells 3,064,000. White cells 8,800. X-ray study gastro-intestinal tract negative except for slight stasis in the colon.

Treatment consisted of forced feeding of the proper food, dilute hydrochloric acid after meals, and cacodylate of soda by hypo. Under this haemoglobin came to 90 per cent (Tallovist) in September, but fell to 70 per cent in October with 2,112,000 red cells. A transfusion was given late in November. This improved her condition very much.

Going on the theory that the gall bladder might be a focus of infection gall bladder drainage was instituted. She was drained six times in four months. While there was no pathology found in the bile, the drainage made her feel better.

Patient failed to report for six months and in November had haem 35 per cent red cells 1,600,000. Eleven transfusions were given, with varying success, from

this time until April, 1922, when the haem was 25 per cent and red cells 1,272,000. She was taken to the Mayo Clinic and the following report is taken from the report of Dr. Herbert Z. Giffin. "April 17, 1922, haem 14 per cent, wbs 4,200, rbc 740,000. Lymphocytes 25, large monos 3, transitionals 1, neutrophilic polys 69, eosinophils 1, neutrophilic myelocytes 1. Neurological exam revealed evidence of subacute combined sclerosis, and a diagnosis of pernicious anaemia seemed quite clear. Up to May 23, she was given eight transfusions. Her red count never went higher than 2,420,000 and at the time of her dismissal was 1,460,000. Haem went from 14 per cent to 40 per cent but after May 4 went steadily down in spite of transfusions. She died the last of May. Just four years from first appearance of tongue symptoms.

A MEDICAL VETERAN'S SECTION FOR THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

Chas. O. H. Laughinghouse, Greenville, N. C.

Days besmirched with mud and mist are ceasing to pay usury to nights. Nature is kicking off her "Cover lid of claminess and cold," in order that she may give birth to Spring. In less than a month the tenth of May will greet us. The anniversary of Stonewall Jackson's death; Abraham Lincoln's suspension of the writ of Habeas Corpus; the day set apart by grateful Southern folk to do honor to those who wore the "Gray."

If spirits come back from across the Great Divide—it is at this particular season that the soul of Southern patriots returns to the land they loved enough to die for. The Shades of the Architects of American Independence, of those who "Crossed the Bar" during the Mex-

ican War; the Civil War; the Spanish-American War; and the great World War. Me thinks that on this particular occasion, I can almost hear them say, "Lord God of Hosts be with us yet, Lest we forget, Lest we forget."

I would not recall bitter memories, because we are, above all, Americans. It is the desire to perpetuate Americanism, as well as to give honor to those to whom honor is due that prompts me to bring before you the following facts. Kipling says, "The East is East and the West is West," and so far as the great history of the United States is concerned, "The North is North and the South is South."

Teach the people Americanism by all means. Teach it in the schools and churches. Teach it from the press and from the Chautauqua platform. Let the lips of those proclaim it who would mould a purer public, and personal patriotism. Live it, Live it always, but for the sake of America and for the sake of Patriotism itself, let no man undertake to blot from Geography or History that which bounds the South on the North, and the North on the South.

The leaders of the measures which brought about American independence were south of the Mason and Dixon line.

In the War of the Revolution from the battles of Moore's Creek, King's Mountain, Eutaw Springs and on to Yorktown, the great American recruiting ground, as well as the Americanism which bore the brunt of this war, was situated and lived South of the Mason and Dixon line. Our own State furnished over 25,000 troops in these sparsely populated times, 17,000 of whom fought for love of country and without one cent of pay.

When Washington, sick because of Commercialism and lack of patriotism of New England, crossed the Delaware, North Carolina gave him hope with her six regiments commanded by General Nash. It was with these that he gave battle to the British at Brandywine and Germantown. The great souls

*Read at the Asheville meeting of the Medical Society of North Carolina, April 17-18-19, 1923.

who guided the Ship of State during those perilous times, lived, moved and had their being south of the Mason and Dixon line. Peyton Randolph, president of the Continental Congress, Richard Henry Lee, author of the resolution declaring the colonies free; Thomas Jefferson, of the Declaration of Independence; George Washington, Commander in Chief of the Continental Army and first president of the republic; James Madison, author of the Constitution; John Paul Jones, the naval genius, who carried the American flag into foreign ports and made it feared on every sea, were all born and bred south of the Mason and Dixon line.

During the War of 1812, Massachusetts, Connecticut, Rhode Island, New Jersey refused troops to the Government, while Governor Thomas Brown of North Carolina with the Brigades of Davis and Dickenson were fighting the British at Norfolk. While Boston was celebrating British victories Johnson Blakely of North Carolina was sweeping the British from the high seas. While blue lights were burning on the New England coast to give information to the British, old Andy Jackson in command of Tar Heels and Tennesseans was down at New Orleans pouring grape and cannaster into dear old England.

In the Mexican war, when 50,000 volunteers were asked for, 47,000 were offered by the South. This war was fought and won by Southern officers and men, while Massachusetts was threatening to secede.

Those who added most to our country's expansion, were south of the Mason and Dixon line. Jefferson added the Louisiana purchase, Monroe the Florida territory, James K. Polk of North Carolina added Texas and the parts of the United States formerly belonging to Mexico.

I have heard many times from public speech and private talk that in the Civil War our fathers fought for the right as they saw it, and to this statement I have heard Southern men apologetically agree. Now that sixty years have passed let's see if facts bear out this

statement. We do it from no factional feeling but because of respect for our forebears which gives us the right to at least look for and learn the truth.

The South fought for the rights guaranteed her by the constitution of the United States—which rights were denied her by the might and materialism nurtured and organized in that part of this Union north of the Mason and Dixon line. There was a conflict of interest between the organized commercial North and the unorganized agricultural South.

The South prospered with her natural advantages, so did the north, but the North divided her genius, power and statesmanship to gaining commercial advantages, and governmental exploitation to her own sectional benefit.

In 1828, Virginia, North Carolina, South Carolina and Georgia were paying 34 per cent of the expenses of the Federal government and getting next to nothing in return. It was tariff and not slavery, an economic rather than a moral issue which provoked the antagonism between the North and South. Nothing was ever invented that so impoverished and despoiled one section to the enrichment of another.

On account of there being four tickets in the field in 1860, thirty-nine per cent of the people elected Lincoln to the presidency. Realizing that the administration would convert the Government into an engine of depression and despotism, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana and Texas reassumed their sovereignty.

The Northern party passed the Morrill act raising import duties to an average of 60 per cent and war was upon us. The statesmen of the North were adroit enough to combine elements of philanthropy, abolitionism, fanaticism and avarice which succeeded in placing the South before the world as fighting for slavery, when actually her fight was against commercial robbery and for constitutional rights.

New England's prosperity was based upon the products of her fisheries and factories along with the sale of rum and slave ships. In the Constitutional con-

vention, the only man who raised his voice against slavery was Thomas Jefferson of Virginia.

In 1847, when Virginia gave the great Northwest to the United States, she expressly stipulated that servitude, except for crime, should be prohibited.

The first slave ship built in America was not built in the South but at Marblehead, Massachusetts, in 1826. The last record of the capture of a slave ship was in 1861 when Lt. J. J. Guthrie of Washington, N. C., captured and delivered the slave ship, *Nightingale* of Boston, handing 961 slaves over to Governmental authorities.

The North sold negroes to the South. The South paid for and amalgamated them into her own unique patriarchal system. Slavery as an institution had its evil, but it was the greatest manual, moral and mental training for a weak and infirm race that the world has ever experienced. Who knows but that it was God's way of civilizing savages? The actual value and earning capacity of slaves was itself a bond for their comfort and care, and the family example and teaching converted them through the great law of environment from savages to the Sacrament of Christ. The highest tribute paid to any people was evidenced by the North when it acted on the conviction that three or four generations of Southern training made pagan slaves worthy of American citizenship and capable of taking part in directing the destiny of the greatest republic in the world.

When Great Britain and France freed their slaves, they paid their owners for them. But the people north of the Mason and Dixon line, sold slaves to the people south of it, then in spite of the fact that the constitution of the United States guaranteed the rights of the slave owner, the purchasee overpowered the purchaser because slave labor competed with his own and because the South resisted a discrimination in favor of the purchasee against itself.

Is it not wonderful that in less than fifty years, men and women Southern born whose surviving parents are still

smarting under insults, injuries, and privations hurled against them by their Country should rally to that Country as did the South in the World War.

Nothing but the hardihood inherited from the Pilgrim Fathers could produce such a people. Nothing could do it but the patriotism which won the wars of the Revolution, of 1812, the Mexican War and the Spanish-American War.

The history of the South, filled as it is with the deeds of Southern men, did too much to civilize this country and make it ready to meet the test of genuine Americanism and World Citizenship for us to neglect any undertaking, the influence of which would tend to keep our records straight.

Because, proud as we are of Southern history, when it comes to Americanism, WE OF THE SOUTH KNOW NO SOUTH, NO EAST, NO WEST. No people, no section can possibly glory more in the fact that we are so strongly cemented as a nation that a plain honest southern plough boy could and did join hands with the enlisted son of a governor of a northern state, and a president of the United States, for no purpose other than saving the world. It is glorious beyond description to visualize them standing, hand in hand and joining voices in the singing of "My Country 'Tis of Thee." They wafted the great chorus across the waters and brought such inspiration to exsanguinated Europe, that bleeding Belgium heard it and took heart. Italy so elated by its hopeful strains gathered her remaining hosts together again, forgetting every thing but victory. It reincarnated the waning power of Great Britain so that her basso-profundo joined in so lustily that the Hohenzollern, hearing it, trembled in Berlin.

The music so mellowed the inspiring patriotism, loyalty and gratitude of La Belle France, that verily she led the chorus which gripped every corner of the Globe until the whole world made ready and took part in the grandest of grand anthems, "Peace on Earth Good Will Toward Men."

All this being true, is it worth while

for this Society to form a section for no purpose other than getting data on record regarding our own State, which will give authentic material for the history to be made for our sons and daughters? Had this been done at the close of the Civil War, our State historians would have had data rich in material with which to gladden and to glorify generations yet unborn.

A CASE OF LUETIC ARTHRITIS.

O. B. Darden, M.D., Westbrook Sanatorium,
Richmond, Va.

While syphilis of the joints is not such an uncommon condition some interesting features of this case warrant its report.

C. S., negro laborer, 26 years old, unmarried.

The family history is insignificant except that the mother died of tuberculosis at about 45 years of age and one maternal uncle is at present a sufferer from the same disease.

The past history is unimportant. He had measles, mumps, whooping cough and chicken pox in childhood with complete recovery. There has been no rheumatism or tonsillitis; he has never been in bed before with any illness since childhood.

In July of this year a genital sore appeared which he treated himself with caustics on the advice of a druggist. He thought this was a chancre, but has had no further treatment. He had gonorrhea about a month ago which he successfully treated without consulting a doctor.

During the latter part of October he noticed a slight pain in the knees and ankles, but paid little attention to it. Within a few days he felt a severe pain in the left wrist and noticed a slight swelling on the thumb side of the wrist and hand. The pain grew worse, especially on movement of the joint, until he was forced to give up his work. Aspirin brought about no relief. After about a week the same sort of pain developed in the right wrist with some en-

largement that continued into the little finger. Within a day or two pain developed in the left elbow and then in the right, but no swelling occurred. The pain in these joints was exceedingly severe and he consulted a doctor who gave salicylates. After taking this for awhile the pain had not subsided at all. There was no other complaint whatever, except that the severe pain kept him awake at night. The throat was not sore, there was no increase in sweating, there was no malaise, and he felt perfectly well except for the pain in the affected joints.

Examination revealed a well nourished negro who did not look to be particularly sick. The tonsils were normal; the teeth were in good condition with only a slight degree of pyorrhea which apparently did not account for the joint trouble. Blood pressure was normal; there was no sweating and no elevation of temperature. The upper extremities were held motionless in as far as possible and any slight movement, active or passive, was accompanied by extreme discomfort; the affected joints were markedly tender to slight pressure. There was some effusion on the left along the tendons of the thumb and index finger while on the right the effusion was on the opposite side, both presenting the picture of a teno-synovitis. The foreskin was somewhat elongated and on the under surface was a recent ragged scar with some induration still present. The blood examination showed: leucocytes, 13,400; small lymphocytes, 12 per cent; large lymphocytes, 40 per cent; polys, 84 per cent; Hb, 65 per cent. The urinalysis was normal. The blood Wassermann was four plus.

The patient was immediately placed on Salvarsan and daily mercurial inunctions. After the first dose he was able to sleep and the pain began to subside. Within a few days he was able to use the hands and return to work. A week after the second dose the hands were freely movable without causing pain, and all swelling had subsided except in the little finger of the right hand.

Summary:

The outstanding features of this case are its similarity to polyarticular rheumatism in character of pain and migratory tendencies; while it differs from infectious arthritis in that there was no focus of infection, no chill, no elevation of temperature, no disturbance of the pulse rate, no local heat or redness, no sweating and no feeling of sickness except for pain.

DELIVERING THE MESSAGE OF HEALTH TO THE PUBLIC.*

R. L. Carlton, M.D., City Health Officer,
Winston-Salem, N. C.

Doctors, more than any other class of persons on earth, should be interested in teaching to all people the simple truths about the care of our bodies. It should be the aim of every doctor to teach many who do not now have that knowledge how to live and to awaken and increase the interest of those who do possess such knowledge. Physicians realize, as none others do, how small is the number of people who really know how to take care of themselves and how many there are who take no heed until they become ill, perhaps past all hope of recovery. Then, "All that a man hath will he give for his life."

To be well—to have good health is of first importance in the life of every one. If we expect to be happy, to prosper, to be of any importance to the state or nation we must consider that our health is wealth—that it is our greatest asset.

The greatest cause of poverty is sickness. Sickness is an expense both in loss of time and money. This is seen in the cost of maintenance of hospitals, clinics, boards of health, etc. It is seen in the expense incident to keeping children in school a longer time than would have been necessary but for sickness. It is seen emphatically in the tremendous cost of sickness in industry where

millions of dollars are lost annually through illness.

The losses from sickness must not all be calculated upon a money basis. Dr. Darlington, former Commissioner of Health of New York City, said "In order that any state or nation may succeed, its citizens must be upright, with high ideals, and have within themselves the restraining influence of a moral education; for what abiding happiness can there be in a state where the standard of morality is low? So it is of even more importance to family life and to the nation that the young shall early receive proper guidance and training. In this respect the loss of a mother by premature death is worse than all else. Think of what the child misses, who has never been taught to pray at the mother's knee, who has never known the smile of mother love, her tender watchful care, her gentle chiding and her restraining influence! These things cannot be reckoned in dollars and cents—they are incalculable"—with which I am sure we all agree.

"We must all die; but the date of our death is largely our own making. Premature death comes from sickness or accident; and most people die prematurely" said a recent prominent writer on the importance of health.

The knowledge which physicians have acquired along these lines is being used more now than ever before to aid others—to prevent illness. The physician of the future will concern himself as much with the prevention as with the cure of disease.

Since it is a fact that prevention rests largely with the people themselves and that many of them do not know how illness can be prevented, not being familiar with how diseases spread, or how the body may be built up to resist disease, or how to prevent the entrance of disease germs into the body—then it becomes our duty to teach them health.

This duty devolves not only upon health departments, health officers and boards of health but upon every physician, be he specialist or general practitioner. And this does not mean "State

*Read at the meeting of the North Carolina Health Officers' Association, Asheville, April, 1923.

Medicine" nor "Social Medicine" nor the cutting off of the income of the physician, for by his teaching the people the proper care of their bodies and the consequent preservation of their health and the prevention of diseases he will in so doing increase his clientele and his income as well.

The fundamentals to be taught are that for one to keep well he must know something of how diseases originate and to watch for the beginnings of disease; that the health of children at birth largely depends upon the care and health of the mother; that some agencies produce disease directly, as pneumonia germs, while others predispose to disease, as the carrier of pneumonia germs who becomes too tired or gets cold and develops pneumonia; that some races of people are more apt to be attacked by certain diseases than others; that direct injury, accidents, are too often due to carelessness, lack of thought; that there are physical or external causes of disease, such as changes of atmosphere, insanitary conditions, poisons, etc.; that germs are responsible for most diseases and that while they may attack us through several channels many of them are destroyed after they enter our bodies; that many diseases are slow and insidious in their outset; that each part of the body is dependent upon the working of the other parts; that weak organs must be guarded; that it is of the greatest importance that every one who is not himself entirely familiar with the human body and how it works should be occasionally examined by a physician or a group of physicians to determine if every part of the body is working normally or if there is any disease beginning.

If these are minimum fundamentals regarding health which the people, the public, should know and if the prevention of illness does depend upon the people themselves, are they ready to be taught, will they cooperate to the extent of making the practical working out of such a scheme possible? We contend that the public is ready for such work and if given an opportunity will cooperate to an extent hitherto undreamed.

An example—there is a North Carolina community which seven years ago spent for public health work about \$12,000. This amount paid for city physician, one nurse, sanitary inspector and two or three part time employees. In that community no opportunity has been lost during the past six years to inform the public regarding matters of health. The people became interested; they responded; they instructed their governing bodies to give them more facilities pertaining to health with the result that appropriations were increased year after year. The 1922 appropriation was \$50,000, which paid a staff of 21 full time health workers and three part time. Incidentally—has such expenditure paid? One item—the death rate is the answer. In 1917 the death rate per 1,000 was 25; in 1922 it was 12.6.

Another example—Tuberculosis in this same North Carolina community was 10 years ago causing deaths at the rate of 310 per 100,000. There was no systematic effort being made to fight the disease or to greatly enlighten the public concerning the proposition. Now that same community knows something of the menace caused by tuberculosis and is supporting a real anti-tuberculosis program which calls for clinics, doctors, nurses, hospital beds, Modern Health Crusade classes, special assistance to undernourished children, etc. How has this come about? The story of the sale of tuberculosis Christmas seals in that community last year will probably best answer such a question. During the entire year the public heard something from time to time through newspapers, bulletins, letters from the department of health and through doctors and public health nurses of the work of the tuberculosis clinic in its examinations of persons who had been exposed to tuberculosis and of those who for any reason found an examination necessary and of the discovery of cases not previously recognized, etc., the public had been hearing of work done with school children in Modern Health Crusade and Nutrition Classes and of the corrections

for school children of certain defects which might be predisposing to this dread disease. No regular systematic bombardment of literature or publicity was used but enough educational material was released in the various ways mentioned to keep the public alive to the fact that there was a division of tuberculosis in the department, that its services were available to all citizens.

Toward the close of the year a more or less intensive campaign of publicity was carried on for a few weeks somewhat as follows: three pieces of literature bearing directly on this proposition were published. The first one was entitled "What a Tuberculosis Program Means to this Community." It was a very simple discourse upon the disease, its dangers, how the right sort of program would enable people to avoid it, etc., and ended with half a dozen human interest stories of persons who had been reached and helped during the past year. This booklet was mailed to some 2,000 citizens.

A second folder was entitled "What Did You Do With My Money Last Year?" This mentioned the receipts for the previous year and exactly how the amount was expended—nurses, crusade, material relief, educational material, sputum cups, supplies, milk, etc., and on the opposite page set forth the estimated amount needed for continuing and enlarging the program for the coming year. This was mailed to some 3,000 people and was also published in two daily papers.

The third piece of literature read "Ten Reasons that Mean Much to You." This folder was purely educational. It mentioned the number of tuberculosis deaths, the estimated number existing cases, the fact that tuberculosis caused more deaths in that community than did seven other communicable diseases combined; the school children in nutrition classes and those in Crusade Classes trying to learn good health habits; the cost, so far as it could be estimated in dollars, to the community by tuberculosis cases and deaths; the results which had been achieved in the past few years by a program against the disease; the fact

that a falling death rate was largely due to the active cooperation of the people themselves, etc.

This folder was sent into at least 5,000 homes.

In addition to this literature and various articles in the newspapers the same information was presented in talks to the leading civic clubs, to women's clubs, to churches and Sunday Schools. In brief the public of that community at the close of 1922 knew more facts about tuberculosis and especially of the disease as a local proposition than ever before.

Did they respond? Did they show a readiness to receive such a message of health and to cooperate with those persons trying to drive away the menace? The answer lies in the amount received from sale of Christmas seals. The community five years ago gave \$600 to this cause; they were asked this year to give \$6,600 and actually turned in a little more than \$7,100.00.

Is the money they gave the entire answer? It is not. I am happy to say to you that this community which less than 10 years ago had a tuberculosis death rate of over 300 per 100,000 had in 1922 a tuberculosis death rate of 149 per 100,000.

We submit that the public is ready to be taught the message of health, that it is willing to pay for such teaching and that the people will cooperate.

This rather long drawn out narrative does not mean that every doctor should engage in a game of publicity or campaign such as may be put on by a department or board of health. It is contended however that doctors in general are only touching the edges of the proposition so far as bringing the message of health to the public is concerned when they practice curative medicine only. There is a larger field, just as interesting, touching more nearly the ideal and meaning much more to both physicians and people generally when the public is being taught health and that health is that quality of life which renders the individual fit to live most and serve best.

ORGANIZATION OF THE TRAINING SCHOOL FOR NURSES OF THE NORTH CAROLINA SANATORIUM FOR THE TREATMENT OF TUBERCULOSIS.*

By E. Connolly, Superintendent of Nurses, Sanatorium, N. C.

This subject is considered timely because much is being written about training schools for nurses, the standard curriculum and allied subjects. It is obvious that a training school in a tuberculosis sanatorium is managed differently from one in a general hospital, consequently it occurred to us that the organization of our training school for nurses might interest some of the nurses.

The training school of the North Carolina Sanatorium was organized in 1914, and since that time quite a few nurses have graduated, but, of course, not all who entered. The nurses are young women who have had tuberculosis and who have become arrested or quiescent cases by sanatorium treatment. We give a two years' course, at the end of which time the nurse is given a diploma which certifies that she is qualified to do tuberculosis nursing, or she may take the third year in a general hospital, provided her health permits, and then become a registered nurse. Two of our last year's graduates are now taking the third year at the Mission Hospital, Asheville. Four of our graduates are with us now—two are in charge of the wards, one assists the Laboratory Technician and keeps all the laboratory records, and the fourth one takes care of the doctors' offices and assists with Dr. McCain's clinics.

We now have enrolled eleven pupil nurses. Some of the things which are required as part of their training are as follows:

1st—**The Diet Kitchen**—Practically the same experience as in a general hospital.

2nd—**Charting**.—Besides the temperature charts a weight chart is kept for each patient. The patients are weighed on admission and once per week during the time they remain in the Sanatorium.

3rd—**Drug Room**—A senior nurse is kept in charge of the drug room and she makes up the different solutions, tinctures, ointments, capsules, etc., which are used in the Sanatorium.

4th—**Heliotherapy** given by the Alpine Lamp, with which the pupil nurses assist.

5th—**The administration of the phenolsulphonephthalein** for the functional test for kidney efficiency.

6th—**Fractional Ewald Meals** by the Rehfus method, in which the pupil nurse executes the entire procedure so far as the patient is directly concerned.

7th—Operating Room

- a. Pneumothorax
- b. Gynecology
- c. Lumbar punctures
- d. Aspirations
- e. Neosalvarsan
- f. Other minor operations

8th—**Laboratory work** totaling sixteen hours and comprising mainly of the analyses of sputum, urine and blood.

The nurses also teach the patients the first principles of sanitation and prevention of respiratory diseases.

Nothing has been said about the regular course of study, because, with us it is the same as is given in the general hospitals. This results in our graduates being well prepared for the third year course in the general hospital.

The negro sanatorium, which opened in October, is located about one-half mile from the other buildings. This building will accommodate fifty patients. Twenty-five have been admitted already. Dr. J. W. Walker (col.) of Asheville, and two graduate nurses, colored, complete the medical and nursing staff at present; however, it is all under the supervision of Dr. McBrayer, Superintendent, and his assistants. It is officially spoken of as the "Negro Division."

*Read before the Seventh District Association, Fayetteville, N. C., December 13, 1923.

THE RELATION OF BLOOD INFECTION TO FOCAL INFECTION.*

By W. R. Stanford, M.D., Durham, N. C.

The relation of blood infection to focal infection is a close one—in fact as close as cause and effect, the one being a local manifestation while the other is a systemic one. They have gone hand in hand throughout the ages; long before the days of bacteriology it was noticed that systemic conditions followed local processes. Semmelweis, in 1847, traced the constant prevalence of child-bed fever in the Vienna Lying-in Hospital to the contamination of the genitalia of the women in labor by the unclean hands of the students and physicians fresh from the dissecting rooms. Klebs was probably the first to recognize that local and general sepsis were due to micro-organisms which he termed *microsporon septicum*. After Klebs came Lister and Pasteur, and it is from these two men that our knowledge of bacteriology and its relation to focal and systemic infection dates.

The invasion of the blood by pathogenic bacteria is referred to as septicemia, and the bacteria chiefly concerned in the causation of septicemia are: *Streptococcus Hemolyticus*, *Streptococcus Viridans*, *Staphylococcus Pyogenes Aureus*, *Staphylococcus Albus*, and numerous others such as: *Pneumococcus*, *Gonococcus*, *Meningococcus*, *Colon Bacillus*, *Friedlander's Pneumobacillus*, *Bacillus Pyocyaneus*, *Micrococcus Tetragenus*. Mixed infections are also common.

The chief portals of entry according to Lewellys F. Barker (1) are: The tonsils, the antra, the ethmoid cells and other para-nasal sinuses, the mastoid cells, the appendix, the gall bladder, the lung cavities, the pleurae, and foci in the urinary and genital systems. Phemister (2) emphasizes foci in the skin as sources of *staphylococcus* infection.

Billings (in his *Lane Lectures on focal infections*) mentions furuncles and carbuncles as well known sources of acute bacteriemia, and also mentions the rectum as a site for focal infection giving rise to bacteriemia, etc.—through ulcers and infected thrombi. Stevens in *Practice of Medicine* enumerates the chief portals of entry as: (1) the skin, (2) the uterus, (3) the upper air passages, (4) the urethrae. There are many external forces that cause a systemic condition to arise from foci of infection. Some of these are: Mental and physical exhaustion, starvation, exposure to cold, trauma; operation, weakness, dissipations of all sorts, the *modus operandi* being that they lower the body's resistance and increase its natural susceptibility to bacterial invasion. This in a brief way brings out the etiological factors and shows the relation between blood infection and focal infection.

The morbid anatomy of blood infection presents in the more severe cases extravasations of blood under the skin, as well as in the substance of various organs; and may show patchia over the skin and infarcts in various organs. The spleen is usually more or less swollen and congested, the lungs are congested and may show areas of pneumonic processes. The heart, kidneys and liver are seats of cloudy swelling. The heart may show a true interstitial myocarditis; endocardial involvement is quite common. The vegetations on being cultured show most commonly *staphylococcus*, *gonococcus*, non-hemolytic *streptococcus* or *streptococcus viridans*. Myotic aneurysms may occur. The liver and kidneys may show areas of necrosis. Billings says that this is particularly true when *staphylococcus* is the etiological factor. The pleura and pericardium may also show sites of inflammation.

Billings in his enumeration of symptoms of bacteriemia with endocardial involvement states that detached small particles of vegetation and thrombi carried into the blood stream may cause embolism in various tissues and organs. These in turn may give rise to delirium, coma, paralysis, perisplenitis, varying degrees of hematuria, gangrene of dis-

*Read at the meeting of the Medical Society of North Carolina, at Asheville, April 18, 1923.

tal tissues and patchia. At any local point abscesses may develop from infected thrombi.

The constitutional symptoms of blood infection vary with the severity of the infection and the type of organism causing it. The mild type of case is characterized by a feeling of chilliness, malaise, headache, muscle pains, loss of appetite, fever ranging from 101 to 102, hot, dry skin and restlessness. Severe cases often begin with a chill and a temperature rising shortly to 104 or more. The chills are followed by sweating and there may be daily remissions of temperature. Billings mentions several types of blood infections; the septic which has remission of temperature as described above; the typhoid type which is characterized by a sustained temperature, delirium, coma and a rapid course. He goes on to state that in rare instances the clinical picture is that of cerebrospinal meningitis. Except in the mildest cases there is often a well marked leucocytosis (15,000 to 30,000) and also a secondary anemia. Mark A. E. (3) in speaking of anemia due to sepsis, mentions that Gull and Goodall state that absorption of septic products as in malignant endocarditis and puerperal fever show blood changes which are profound. The urine is concentrated and usually shows albumen, also hyaline and granular casts, and may show red and white blood cells. It is often possible to obtain the living organism from the blood stream by culture. Death occurs usually in from one to three weeks.

Chronic blood infection is usually caused by the streptococci of the viridans group. This type of infection may last for weeks or months. It is characterized by occasional chills, irregular fever, anemia, weakness, endocarditis, enlarged spleen, patchia, peculiarly reddened infected finger ends, normal or slight leucocytosis, red blood cells in the urine, and practically always comes to a fatal conclusion. Barker thinks that granulomatous areas about the teeth are the most frequent foci for this type of infection. He goes on to state

that he has seen twenty cases all of which died.

The diagnosis of septicemia is often easy, but at times is very hard to make, especially when there is no evident focus for the infection. The diagnosis should be based on the occurrence of irregular fever, chills, anemia, leucocytosis and history. Repeated blood cultures if positive are very strong evidence, but if negative do not disprove it. In the differential diagnosis typhoid fever, malaria and miliary tuberculosis are the chief things to be considered. In ruling out typhoid one depends largely on the history, the physical examination, the Widal and blood culture.

Malaria can usually be ruled out by the history and the failure to find the plasmodium, and if necessary the therapeutic test of quinine may be tried. Miliary tuberculosis can usually be ruled out by failure to find any signs of local tuberculosis, by the leucocytosis, by the examination of sputum and spinal fluid (with its guinea-pig test, cell count and differential count), and by the family history. Blood culture is the only method which definitely shows the type of blood infection.

The prognosis depends upon the type and severity of the infection, and the resistance of the patient. In general, the prognosis is bad, especially if there is endocardial involvement. Billings says that he had two cases of gonococcemia with suppurating multiple arthritis to recover. He also mentions that Thayer reported 2 cases of gonococcus endocarditis which recovered; also that Herrick had noted recovery in malignant endocarditis, and that E. R. LeCount in Coroner's Autopsy Cases found six or more cases with healed scars of ulcerative endocarditis. Billings has also seen three cases out of more than a hundred cases of streptococcus viridans bacteriemia recover. Libman has reported recoveries in this type of infection. Stevens in his Practice of Medicine states that contrary to belief formerly held, true septicemia even if due to streptococci is not necessarily hopeless.

The treatment of septicemia, judging from what has been said above, in a large percentage of cases is discouraging. The general measures consist in pushing water, elimination, proper food and proper hygienic measures. The chief drugs of value are strychnine, digitalis, morphine, alcohol and quinine. J. H. Stokes (4) tried arsphenamine with unfavorable results. Merklin and his co-worker (5) reported a case of septicemia arrested by the use of a polyvalent (staphylococcus, streptococcus and pneumococcus) where recovery followed four injections of vaccine. A. Kraft and N. M. Leitch (6) showed that in experimental septicemia morphine exerted a harmful influence. Serum treatment has given variable results. In my three years at the University of Pennsylvania Hospital I recall one case which seemed to be benefited by serum. This was a case of staphylococemia in a youth of fourteen, which case was recently reported among a series of Staphylococemias by Albert E. Bothe (7). This particular patient's blood culture became negative and he seemed to improve for a time but died following an operation for osteomyelitis of the right pelvis. Polak has stated that frequent small blood transfusions have given excellent results in some severe cases. Stengel used fresh anti-streptococcic horse serum in a case of septicemia with sub-acute endocarditis with excellent results. Edmund B. Piper (8) has recently reported some rather encouraging results from the use of Mercurochrome intravenously.

A good deal of work has been done along the line of clearing up foci of infection as a therapeutic measure, but it is very much like blowing out the match after it has been touched to oil—the systemic condition is usually not affected.

Before attempting to bring this paper to a close I would like to present a case which, I think, illustrates some of the points which I have tried to bring out.

L. H.—A female aged 19, (factory worker), was admitted to Watts Hospital on January 30, 1923. She came in unconscious so the history had to be ob-

tained from the family. Some time in the late fall (1922) she had had some boils which were probably treated; about three weeks before Christmas she began to complain of sharp pain in left side and small of back, and a short time later the pain radiated to her left shoulder and she became so sore that she could not turn in bed. Her appetite became poor and she had some cough, but she continued her work in the factory until three days before Christmas when she was obliged to go to bed. A doctor was called in and her condition diagnosed as influenza. A little later she began to have pain in her legs and red bumps appeared over her body, mostly on her face. Finger and toe tips became sore and festered, and about this time she had a small nose bleed; her father thought she had some chills. There was no digestive disturbance except loss of appetite; hands and feet had not been swollen. On January 28, 1923, she became stuporous and delirious and remained in that condition. Her past medical, social and family history were all negative.

Physical examination on admission showed a somewhat emaciated, anemic, stuporous girl of 19; some muttering; good many patchia over body; some bloody bullae on feet; pupils equal and reaction normal; mouth dry, tongue coated; neck rather rigid, head retracted. Chest: Expansion fair, good many moist rales heard in region of left axilla; no bronchial breathing or friction heard. Heart enlarged, to the left especially; a loud musical murmur heard over heart, best at apex; rate regular but rapid (140). Abdomen rather rigid but otherwise negative. Extremities rigid. Some ankle clonus on both sides; Kernig present; also some muscular twitching.

She was admitted with a temperature of 105.4, a pulse of 120, and respiration of 24. Temperature ranged from 102 to 107; there was a slight daily remission but most of the time it was a fairly sustained temperature. Her pulse ranged from 120 to 164—respiration from 24 to 56; the urine showed a cloud of albumen, no other abnormal findings.

Leucocyte count of 20,000, R. B. C. 2,- great deal of good.
670,000; hemoglobin 35 per cent.

Of course, typhoid was thought of, but the main things considered were military tuberculosis and blood infection, with the odds slightly in favor of blood infection because of the evident endocarditis. A Widal and blood culture for typhoid were negative; the spinal fluid showed no tubercular organisms, cell count was 117. globulin present and sugar negative. Culture of fluid was negative as was also guinea pig test. A blood culture taken 2.2.23 was positive for staphylococcus; Wassermann and VonPirquet were negative. Eye ground examination showed no patches or tubercles.

Her condition gradually grew worse and on February 3, 1923, she died. A second blood culture taken the day she died showed a positive culture of staphylococcus.

Although little change could be noted in the size of the heart and character of murmur from day to day, I feel certain that the patient was suffering from a staphylococcemia with endocardial involvement. I also think it is logical to assume that the boils were the original foci. The two positive blood cultures seem to be fairly conclusive evidence.

This case was especially interesting to me because of the unusual amount of cerebro-spinal irritation, the cardiac involvement, the difficulties it offered in differential diagnosis, and most of all because it seemed to show the relation of focal infection to blood infection.

In our attempt to draw conclusions from this study there are several things that seem to stand out. 1. That focal infection in a large percentage of cases is the forerunner of blood infection. 2. That the prognosis depends upon the severity and type of infection. 3. That treatment of septicemia is uncertain and, in a large percentage of cases, unsatisfactory. 4. That there are several types of septicemia. 5. That the blood culture is the surest means of determining the specific organism causing the infection. 6. That removal of the foci after the blood stream has become infected does not seem to do a

(1) Journal of Dental Research, Vol. 11, No. 1, March 1920.

(2) D. B. Phemister, M.D., A.M.A., 2-18-22; P. 480.

(3) Minnesota Medicine, 1922, Vol. P. 536.

(4) Mayo Clinic, 1920.

(5) Bulletin de la Societe Medicale des Hopitaux, Paris, P. 914.

(6) Journal of Pharmacology and Experimental Therapeutics, Baltimore.

(7) Medical Clinics of North America, Jan. 1923, P. 1032.

(8) A. J. of Obst. and Gyn., 1922, P. 532.

SIGNIFICANCE OF HEMORRHAGE FROM THE URINARY TRACT.

By W. W. Craven, M.D., Charlotte, N. C.

Bleeding from the urinary tract is very often baffling to the physician, both because of the difficulty encountered in arriving at a proper diagnosis and in the matter of finding suitable remedies for the relief or cure of the condition.

Although our first thought in cases of haematuria from the urinary tract is perhaps in the order named: stone, tuberculosis and tumor, there are a number of other causes that must be borne in mind. It is encountered in nephritis, malaria and haemophilia. In cases after the ingestion of certain irritating drugs as turpentine and cantharides. Then too, there is a large class of cases called for lack of proper diagnosis, Idio-pathic or essential haematurias.

A hemorrhage that is intermittent, severe and with no other recognizable symptom is often due to malignant disease located in bladder or kidney. Tumor can usually be distinguished from the so-called Idio-pathic by careful palpation, for in the latter instance there is no palpable enlargement or displacement of the organ or organs involved. Then too in almost any case of renal tumor, there is deficient functional activity, more or less, readily ascertained

by the standard functional tests. In many cases where we cannot prove stone, tuberculosis or tumor, we are obliged to place our patient in that large indeterminate class designated as essential haematuria. Certain of these cases, according to observers, have yielded to the administration of turpentine. Cures have also been reported from the injection of adrenalin solution into the kidney pelvis.

Beginning at the external meatus and going inwards, I will try to enumerate the common causes of bleeding and give some points of differential diagnosis. First, in considering the urethra, we note that in the case of the pendulous urethra, blood is rarely seen except in cases of trauma and then as a rule it is in negligible quantity. It may be due to injury from within, or from without. In the former case, foreign bodies and sounds are the medium in many cases. Rupture of the urethra with its subsequent hemorrhage is most commonly located in the bulb, and is due to a kick, or falling astride of some hard object. In these cases, the soft parts are usually spared and one may easily under-estimate the amount of damage done.

The pendulous and post urethrae are almost never ruptured. In these cases of urethral hemorrhage, the origin can be satisfactorily determined by the familiar two-glass test. In case the damage is done anterior to the compressor urethrae muscle, the blood will be in the first glass only. Of course, in a case of very free bleeding, the urine in the second glass would also be tinged. Also the blood would emerge drop by drop from the meatus, owing to lack of sphincteric control. The history of an injury and evidence of contusion help in determining the location of the lesion.

Going back of the compressor urethrae (or cut off muscle) we find besides trauma, several other possible sources of hemorrhage. Here as in the case of the anterior (ext.) urethrae the blood is not apt to be in large amounts, and through the action of the "cut off" muscle may be retained for a time and

not at once manifest its presence.

At times there is a terminal haematuria associated with post urethritis. The amount is necessarily small and its co-incidence with the history of specific urethral inflammation should give little trouble as to diagnosis. In these cases, the loss of blood is due partly to the intense inflammation in this region and partly to the trauma accompanying the spasmodic action of the expulsive mechanism. Also there have been reported a few cases as being due to stricture, but it would seem that this condition as a causative agent would very seldom occur. It has been stated on good authority that prostatism is a cause of leakage of blood into the deep urethrae. Keyes thinks that prostatism is more often a source of bleeding here than is prostatic carcinoma. Only a small part of the gland is heir to this form of malignancy, and it is that portion located below and behind the ejaculatory ducts. In case of prostatism, the bleeding is due to ulceration of the prostatic covering or from secondary calculus.

With negative bladder findings through the use of the cystoscope after the employment of the two-glass test, we can be sure of the location of post urethral hemorrhage. *Taking up the case of the bladder next*, we find here a very prolific field for hemorrhage of varying amounts, stone, tumor and tuberculosis playing for the most the role of causative agents. In distinguishing these conditions, careful attention to the clinical symptoms will go a long way in helping one to arrive at a proper diagnosis.

In cases of stone, there is usually a history of very considerable cystitis. The patient notices that he voids his urine more often in day time, and with greater inconvenience than he does at night. The blood is not likely to be in large amounts and comes at the end of micturition. The more violent the nature of his daily work, the more he suffers owing to increased irritation forced on the vesical mucosa by the patients physical efforts. The classical symptom of sudden stoppage of urine when the stone

rolls into the vesical outlet thus acting as a ball valve is worth little since this is rarely noticed by the patient.

Tuberculosis is a very common cause of hemorrhage and the amount is very often considerable and carries with it very positive subjective symptoms. The accompanying cystitis is at times most intense and is not influenced by exercise and postural treatment, as is true in the case of a cystitis due to stone in the bladder. The tuberculosis trouble is usually secondary to tuberculosis of the kidney and manifests itself, first, by structural changes in the form of ulcerations around the urethral openings.

In case the cystoscopic evidence points to tuberculosis of the bladder, we can as a rule confirm our diagnosis by means of renal functional tests. Impairment of function without the demonstration of tubercle bacilli is not positive evidence, but it is excellent corroborative evidence. We expect of course, to find pus cells and tubercle bacilli if there is tubercular infection above.

Tumor of the bladder is frequently a cause of hemorrhage and this loss of blood comes on at first always at widely separated periods, and is unaccompanied by pain or cystitis. Oftentimes between periods of hemorrhage, the urine is perfectly normal. If a tumor is epithelial the only symptom that it will yield is hemorrhage regardless of the period of its existence. As a rule this is the sole symptom that points the way to the necessity for a thorough investigation. The more villus the neoplasm, the more pronounced will be the hemorrhage. In tumors such as myofibroma, hemorrhage is rare. A characteristic hemorrhage, whether vesical or renal begins without apparent cause and without warning and continues copious and painless and is uninfluenced by rest, diet, or medication. It ceases much as it began without apparent reason for so doing. The fact that the urine is normal leaves the patient with a feeling of false security. A profuse hemorrhage that is negative as to accompanying manifestations should always lead us to think of neoplasm. The hemor-

rhage of course, is not always characteristic for at times it is scant, and continuous and associated with some degree of cystitis and seemingly amenable to treatment. Usually the hemorrhage gets more profuse and recurs more frequently as time passes. There may be long periods between hemorrhages, months and even years may intervene in exceptional cases. The passing of sounds into the bladder may be the means of instituting a hemorrhage. To be characteristic, then the vesical hemorrhage must be *spontaneous, profuse, unalterable, and unaccompanied* by other symptoms. Pain and dysuria when they are accompaniments put in their appearance long after the initial hemorrhage. Clotting of blood has been reported as a complication in a few cases, and this with the accompanying retention of urine naturally causes grave concern for the patient's safety.

Eventually there will ensue in most cases infection and cystitis, and with the voiding of small amounts of urine will be considerable pus and blood. Certain tumors, even carcinomata, are often present for years without causing any symptoms at all. By the time hemorrhage first comes, irreparable damage may have already been done. It is strange to note in these cases of bladder tumors that the recurrent loss of large amounts of blood does not cause marked anemia. Usually the health, generally speaking, is good, and the patient bears his loss of blood in silence until finally the oncoming cystitis causes him to consult his physician for what he considers a very minor trouble. Most bladder tumors are discovered by cystoscopy after the above symptoms have pointed to the necessity of the procedure. It is the only method of diagnosis in time for possible successful treatment. Unwillingness on the part of the patient to submit to prompt cystoscopy is followed with disastrous results. In some cases of very small tumors, or on the other hand, very large ones, this method of diagnosis may leave one in doubt. The small ones may be overlooked at times by a capable cystoscopist, and the large ones may be accompanied by such se-

vere cystitis that the walls are covered with a slough ("sluff") or with a phosphatic covering. Rupture of the bladder is at times encountered as the cause of hemorrhage. This is a rare condition, however, and is seen as a result of trauma when the viscus is well filled, or its walls greatly thinned by ulceration. The alcoholic whose bladder re-fills rapidly and whose sensibility to distention is lessened is in considerable danger of a mishap of this nature.

Rupture of the bladder may be suspected if after a serious accident, one passes bloody urine; or on the other hand, no blood at all. In the latter case the leakage has taken place into the peritoneal cavity. Rigidity and tenderness in hypogastrium are accompanying symptoms.

Cases of rupture of varicose veins in bladder with attending loss of blood has been reported by more than one observer. This, as a cause of hemorrhage must be a very remote one indeed.

In the case of the kidney, we find here for the most part the same causes for bleeding as were enumerated in the case of the bladder; viz: stone, tumor and tuberculosis. The first mentioned is perhaps the most prolific cause of renal hemorrhage. In the X-ray, we fortunately have a most reliable method of arriving at a diagnosis. Negative findings in the bladder demand the investigation of the kidney by all the means at our disposal. When tumor is the causative agent, we note here also that the bleeding is spontaneous and first free of other accompanying symptoms. In many cases, especially the late ones, we have as a guide a palpable mass in region of kidney and symptoms of compression. While we expect to find impairment of renal function in tumor if the growth is small, this may be approximately normal. When a tumor is palpable it is often hard to determine whether it is in kidney proper, or near it. Functional tests may settle this question for us. In case of children this is not to be relied upon as much as in case of adults. Physical characteristics must be depended on to the greatest extent. A large tumor in the loin

of a child almost always means a malignant growth and sarcoma is the variety usually encountered. The more spontaneous the hemorrhage, the more entirely free the patient from any other symptom, the greater the probability of malignant (cancer) disease of the kidney.

Tuberculosis of the kidney is met with fairly frequently, and is a very productive source of hemorrhage. In arriving at a diagnosis, we have as adjuvants, the cystoscope by which we can detect tuberculous changes in the bladder, and the microscope to give us positive evidence as to presence of tubercle bacilli. As a rule, there is intense cystitis and presence of considerable quantities of pus in the urine.

The finding of pus and tubercle bacilli obtained by ureteral catheterization and this with the decreased functional activity of the kidney or kidneys and the positive cystoscopic findings makes a very positive picture indeed of the trouble that we are dealing with.

When rupture or contusion of the kidney is the cause of hemorrhage the history is of main reliance. While as a rule urine containing blood will be voided in these cases still this is less important from the standpoint of the surgeon, than the possible collection of blood in the perinephroetic tissues. Hemorrhage from wounds of the kidney with the exception of rupture is said to be comparatively rare. Even in war, observers report that it is not encountered as often as might be expected. A few cases of aneurism of the renal artery have been reported as giving rise to haematuria from the urinary tract. We must bear in mind the influence that traumatism may have had on it. Get a good history in all cases.

Renal functional tests are not to be relied on too much in case of tumor for often the secreting substance is not badly involved and there is little diminution in functional activity.

Pyelography will often enable the surgeon to clear up cases where all other methods fail. If this fails to give the necessary information, the knife must be resorted to as a last expedient,

WHY DOCTORS BUY WORTHLESS AND FRAUDULENT SECURITIES.

By Samuel O. Rice, Educational Director,
Investment Bankers Association of America

Physicians who number bond men, investment bankers, among their patients frequently complain that bond men squander their health.

"The heads of three bond houses," my family doctor said to me the other day, "are patients of mine, they and several subordinate officers of other houses, and I'll be hanged if they aren't more careless with their health than is all the rest of my practice put together. They'll work like demons for months at a time and then try to make up for the loss of daily exercise and common sense routine by trying to crowd a year's recreation into a few weeks. They'll eat, and drink, too, a lot of stuff that's bad enough at home, but is doubly damaging when they take frequent business trips with irregular hours, heretogeneous food and the unavoidable strain of an exacting business. They are the worst spendthrifts of health that I know among intelligent men."

"At least they are not as bad as doctors." I replied to my friends amazement. "When they need medical service you've got to admit they don't go to quacks for it. They go to the reputable profession and to recognized specialists don't they?"

"What has that got to do with it?" the doctor asked. "Physicians can't avoid irregular hours, but they're not—"

"The argument is," I interrupted, "on the use of common sense, isn't it? You say that bond men don't use common sense about health. But as lax as they are in that, they are not as lavish in squandering health as physicians are in squandering money in so-called investments. Bond men at least exercise common sense enough to realize that it requires a "doctor" to exercise medical judgment for them. How many physicians realize that it requires a "doctor" of investments to select investment se-

curities dependably? Ever hear of an investment banker being swindled by a quack practitioner? How often are physicians swindled by quack investment schemes?"

"There are just two reasons why doctors, as a class, are notable for buying worthless securities. One of them is their failure to realize that in seeking good, sound investments you have to do exactly the same thing you do in seeking health—consult an honest, competent practitioner."

"What's the other reason why we buy worthless securities?" my friend asked with a smile. "Because doctors are not business men?"

"That's the reason usually given, but I don't believe there's anything to it. The second reason is too much optimism."

"There isn't one of you who doesn't believe that next year's practice is going to be a whole lot more remunerative than this year's. Your first years of practice, when you started with nothing and gradually built up your income, taught you that. It's firmly fixed, perhaps subconsciously, in every doctor's mind. It's a life thought-habit of the profession, besides being a somewhat common human trait."

"Well, if things are going to be better next year, I'll just take a few hundred dollars of the stock of this patent electrical device or in that new serum outfit, you argue. Thousands of little oil and mining companies have been organized in the last few years among little groups of friends in every town, city and hamlet in the United States and have blown up after losing the money put into them. I'll wager that in every such little venture 90 per cent of them have had one or more physicians as stockholders. As a profession, you are so confoundedly optimistic you let your optimism run away with your better judgment, and you accumulate a lot of nondescript interests in a number of things you know nothing about and that have little or no value when your widow tries to realize on them."

"Yes, I guess some of that is possibly true," my friend admitted.

"True, of course, it's true. Six months ago I had a little ready money and I asked you to send me your bill. I telephoned you twice. I got that bill last week, six months after I had put my little ready money into some sound investments selected by an investment specialist and not by inexperienced friends or an easy-talking promoter. Now, when I'm shy of cash, you optimistically send me a bill. I'll bet you \$4 you are going to buy a new car. You are careless about collections, partly because it is in the code of your profession not to be mean and grasping. I honor you for that, but your eternal optimism is also a part cause. Oh, you say, I'll get more money next month; if not from Jones, from Smith. And you base your investments on the same kind of careless optimism."

"I'm serious in this, Roy. You wouldn't have a bit of sympathy for me if I disregarded the common sense that the medical profession has patiently drummed into the public for years, the fact that the public must consult reputable, competent medical advisors. You'd have a silent contempt for me if I let some quack or gaudy fake practice in my family or if I answered a cure-all medical advertisement.

"The so-called intelligent public has learned its lesson in medicine, that of consulting reputable practitioners. It is just as important that the medical public learn the same lesson as applied to investing money. You nor any other physician can judge an investment security dependably, if you continue attending to your legitimate vocation. Even if you had time to do it, very frequently you haven't the facilities to determine the worth of a security. Investment banking is such a highly specialized calling that I doubt if any man has the ability to perform the investment banker's work without adequate training in the work.

"Physicians should be the first persons in the world to recognize this fact, but strange to say many of them do not. As a consequence, they are notably heavy losers in bad investments. And the cure for this bad investment con-

dition is the same as in a human pathological condition—consult the reputable specialist who is competent to treat the case."

LAWRENCE HOSPITAL—CASE REPORT.

White female age 65, was admitted 11-27-23. Chief Complaint: Gangrene right foot. Three years ago she had blisters and open sores on foot which healed slowly. General health poor past four years. Two months ago the toes began to blister and turn dark. This condition existed until now, there is a foul slough of all the toes, extending well up on the foot. Two weeks ago patient lost consciousness and remained in a very low mental state until two days before admission to hospital, when her family physician gave her four units of Insulin three times a day with food thirty minutes after. Her condition improved on this treatment. She was admitted to hospital, temperature 103, pulse 100, respiration 25. Urine contained large amount of sugar.

Past History: Has had usual diseases of childhood, none severe. Had typhoid fever thirty years ago. Menstrual history, last period twenty-one years ago. Has had six children. No miscarriages.

Alimentary: Poor appetite. Has had indigestion in the form of pain in epigastrium after meals. Constipated. Polyuria for past year. Not thirsty.

Pulmonary: Negative. Cardiac negative.

Physical Examination: Head, scalp. Hair gray and brittle. All teeth missing. Tonsils atrophic. Acetone odor to breath. Chest wall thin. No dullness, no rales. Cardio-vascular: B. P. S. 140-D-80. Heart sounds clear, no murmurs, pulse regular. Abdomen: Negative. G. U. Negative. Skin: Dry and atrophic. Bones and Joints: Right foot shows a wet gangrene, involving all the toes and half the foot, sloughing exposing the extensor tendons. The

popliteal artery can be palpated pulsating but the anterior and posterior tibials are silent. Neuro-muscular: Patient voids in bed and is not oriented as to time or place. Is very talkative when aroused. Muscles flabby, reflexes sluggish.

Diagnosis: Diabetes mellitus, gangrene.

Treatment: Antiseptic dressings to foot, 6 units of Insulin, (Lilly) on evening of admission; liberal feeding thirty minutes later. At 7:00 A. M. 6 units Insulin, feeding 30 minutes later. At 10:00 A. M. (same day) under spinal anesthesia, right leg amputated at middle third. One hour later 6 units Insulin followed 30 minutes later by feeding. This treatment, 6 units Insulin three times a day with liberal feeding by the nurse kept up until discharged 12-18-23.

Two days after operation patient was up in rolling chair much improved. Six days after admission the urine was sugar free with a blood sugar of .13 per cent. The stump healed per primam and the patient was discharged 12-18-23, walking on crutches, looking and feeling well.

Insulin is a wonderful aid to the surgeon. Had it not been for this powerful specific the life of this patient could not have been saved. In conclusion I quote from Bulletin issued by Eli Lilly & Co., Oct. 15th, 1923, viz.

Insulin is a specific in the treatment of diabetes, but dietary management cannot be neglected. No stated dose can be given as this must be determined in each case by actual trial. Only a few of the more severe cases have required in excess of 45 units daily and many of the cases treated have been able to regain strength and weight on 10 to 20 units daily.

Patients are taught to give their own hypodermic injections as it is manifestly impossible to have the physician do this one or more times daily at an exact time before the meals. Patients should also be taught to make tests for sugar in the urine and a sample of the 24-hour specimen should be checked at least once a week by the physician. An

occasional blood sugar determination is a practical safeguard and indication of progress of the case.

The secret of success in the Insulin treatment of diabetes lies in the correct balancing of the diet against the dose to be employed and the exercise of eternal vigilance by physician and patient.

Points to Be Remembered.

(1) Dietary regulation of diabetes is even more necessary with Insulin treatment than without it.

(2) The diabetic should always keep the body weight slightly below that normal for the age, sex and height.

(3) In case of any complication, the patient should immediately notify his physician.

(4) Lower the dose of Insulin or omit it entirely when there is vomiting or diarrhea, not due to acidosis, as assimilation of food is impaired and hypoglycemia may follow the injection of Insulin.

(5) When a meal is to be omitted also omit the preceding dose of Insulin.

(6) If a patient's supply of Insulin becomes temporarily exhausted, it would be best to omit one-third of the diet until a further supply of Insulin is obtained.

(7) Local infections, febrile diseases and coma make larger doses of Insulin necessary to render the urine sugar-free and the dosage must usually be reduced as these conditions improve or disappear.

(8) If a patient previously sugar-free on a given dose of Insulin suddenly begins to excrete sugar, verify the diet, examine patient for infections, and avoid repeated injections of Insulin into the same subcutaneous area.

(9) Hypoglycemia is more serious than hyperglycemia.

(10) Remember the symptoms of overdosage of Insulin or hypoglycemia reaction. The patient should carry always some form of carbohydrate as an antidote.

(11) Coma in a diabetic may not be true diabetic coma from acidosis. Look for other causes.

SOUTHERN MEDICINE AND SURGERY

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CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

Genius—Intrinsic Not Extrinsic.

Stolen grapes are sweetest, stolen watermelons more luscious and the forbidden jam jar in the pantry presents to many children an irresistible temptation. Even the old cow doesn't mind the scratches as she stretches her neck through a barbed wire fence to nibble blades of grass on the other side although she may be standing knee deep in clover.

The tinsel shimmer of a paradise beyond makes man forget the golden opportunities on every hand and to pass up the world of happiness at his very door.

To be dissatisfied with the things we have and to yearn for the things we have not is a common trait of life. In the heart of man is that Divine impulse to strive for better things and only by such striving can improvements ever come. This is right and as it should be.

In every age and on every hand we see folks who are dissatisfied with their lot—folks who envy their neighbor—doctors who wish they had gone into business and all that sort of thing. We in medicine are sometimes prone to curse our fate and quit the struggle because we do not have the material advantages which loom big in our eyes as we watch the work of one who has gone to the top. We forget that genius is in the man and not in his tools. We forget that no one had made a speculum for Sims, so he used a spoon. Genius was in Sims, not in the spoon. We forget

that one man may take a board and walk on it while another man with a clearer vision may take the other half of the same board and make of it a Stradivarius. Genius was in the man and not in the board.

The story is told of a famous violinist who was invited to play before Royalty. His violin was a priceless heirloom of marvelous tone and envious artists determined to thwart the triumph they knew he would achieve by stealing at the last moment his violin. Nothing daunted he handed his servant a pound note and sent him out to buy the first fiddle he could buy for that price. Stepping forward without his fiddle he explained to the audience his predicament while waiting the few moments for his servants return. Then taking the cheap fiddle he began to play, softly at first but gaining strength and sweetness—sweeter music had no man's ears ever heard. The crowd was charmed then thrilled and finally could no longer restrain its enthusiasm while the King himself arose to lead the cheering.

Genius was in the man and not in the instrument.

If you fail to succeed, if your prestige is shaken, don't blame the other fellow but look back and recall what act of yours is responsible.

If you see the other fellow soar ahead remember that genius is in the man and not in the environment of a small country frontier town. It was inherent genius and not environment that built up the phenomenal reputation of the greatest medical clinic of all time.

If underpaid or never paid, if cursed and misunderstood, if doctoring seems to have lost for you the charms that lured you through the period of preparation, when you feel that after all life can scarcely be worth while, don't forget, Genius is Intrinsic and not Extrinsic.

The next meeting of the Tri-State Medical Association will be held in Greenville, S. C., February 20-21, 1924.

"Darius Green and His Flying Machine."

Those whose memory leads them back long before the days of aviation, automobiles and even bicycles, may have read and if so they recall with mirth the story of Darius Green and His Flying Machine, as published in one of the school readers of several decades ago. In the light of recent years the story is today even more amusing than when we used it as a "declamation" at school when a boy.

The story was written to point a moral and ends with the sentence "The moral is—stick to your sphere."

Darius Green, was pictured as a most ungainly, awkward half-wit who became obsessed with the idea of "Birds c'n fly 'n' why can't I? Must we give in says he with a grin That the Bluebird and Phoebe Are smarter than we be? Just show me that, 'er prove th't the Bats' got more brains th'ns inside My hat, 'n' I'll back down, 'n' not 'till then.

'N' he argued further what's the use in wings to the Bumblebee fer to git a livin' with more 'n' to me? Ain't my bizness ez important as his'n is?

Thereupon Darius Green locks himself in the woodshed loft and with a great accumulation of strings and foolish contraptions fashions for himself a great pair of wings to be attached to his arms and a tail for his feet. After weeks of patient labor his invention is complete then building a platform in front of his loft window he watches for a time when the "coast is clear" and boldly steps out to try his flight. Of course he fell flat amid the wreckage of his crazy dreams. The idea of a human being trying to fly was pictured as ridiculously absurd as it could be made. The purpose of the author was most laudable, and the reason for using it in a school reader was laudable. It painted a picture that could never be effaced from young minds, that of the utter ridiculousness and folly of trying to do things for which we were never fitted. However, in the light of de-

velopments in aviation the author of that story is now made to appear even more ludicrous than he pictured Darius Green.

In the field of medicine many men with a vision beyond their times have been held up to ridicule and scorn, and later the scoffers have been made to swallow their own insults.

"Stick to your sphere" is all right but the dogmatic assertion of a near-sighted man as to just where the limits of that sphere are is dangerous to make and dangerous to accept as truth.

Compulsory Health Insurance.

In the elections of 1920, Compulsory Health Insurance was defeated in many states, but the issue is not dead—only purposely appearing to be asleep. Misguided philanthropists and unthinking legislators are being "worked" by socialistic, communistic fanatics while Bolshevik leaders are spreading propaganda urging its adoption. Such Health Insurance as advocated by these fanatics is true socialism in its rawest form. They have been and today are quietly working in the dark, and trying to keep the doctors of the country in blissful ignorance.

England allowed this monster to get a foothold there and now is in the toils of complications she is finding it hard to handle.

Fourteen thousand British "Panel Doctors" voted to go on strike because their "wages" were to be cut from \$2.25 per year per patient to less than \$2.00. Do you blame them?

"Compulsory" is a word detested by every free-born American citizen. Doctors with army experiences have not yet forgotten how galling it sometimes was to be ordered to do thus and so. Yet this was during a period when selfish ambition and self were less considered because the individual was submerged in the great national crisis.

But now when progress may proceed in its normal way will American doctors feel kindly toward a regime of compulsion?

Will they look with favor on any

scheme whereby non-medical men may dictate what to do and what not to do and also what the fee may be. Don't be fooled—Compulsory Health Insurance is not dead but day by day is trying harder than ever to find an entrance and will succeed if patriotic, loyal citizens and especially the medical men themselves, do not keep ever on the alert.

ECONOMIC CAUSES OF DISEASE.

Surgeon General William C. Gorgas of the United States Army, whose invaluable services to humanity in the cause of sanitation are well known throughout the civilized world was deeply interested in scientific taxation.

If his knowledge of medicine produced such wonderful practical results, may we not learn something from him about taxation, a subject in which he was almost equally interested?

The following address was delivered by General Gorgas at a business men's club in Cincinnati:

"The last twenty-five years have witnessed an enormous interest in all kinds of welfare work. The physician, the engineer, the pathologist, the bacteriologist, the sociologist, the economist, the social worker have each in turn attacked the problems of social hygiene. The result has been the accumulation of a mass of facts invaluable for the comfort and safety of mankind. But, however varied the fields of the workers may be, at one point they all converge at last. Every one of these workers, who looks beyond and beneath his own particular field, every one who ponders on the primary causes of disease, of vice, of alcoholism, of feeble-mindedness, every one, who, in other words, brings his scientific imagination as well as his scientific knowledge to bear upon this problem, is finally forced into the conviction that underneath all obvious and immediate causes there lies one great, general and determining social cause—Poverty."

"Of what use," says the tuberculosis expert, "to send a patient to a sanatorium and perhaps cure him, only to return him to the slums?" "Of what use,"

says the temperance advocate, "to preach temperance when overworked and underpaid labor must needs seek surcease of sorrow in the saloon?" How telling and how biting the reply of the London city missionary when found fault with for not saving more souls? "If you will fill their stomachs with food, I will fill their hearts with the love of God."

Sanitation in my mind has been very closely associated with single tax. I am a single taxer, I think, because my life work has been that of sanitation. Sanitation is most needed by the class of people who would be most benefited by the single tax. That poverty is the greatest single cause of bad sanitary conditions was very early impressed upon me. If I should again go into a community, such as Cuba, or Panama, and were allowed to select only one sanitary measure, but were at the same time given power to choose from all sanitary measures, I would select that of doubling wages. This, in my case, is not altogether theory. In our tropical possessions, in Cuba, Porto Rico, the Philippines, Panama, the result has always come about that we have largely increased wages; the result has also come about that in all these cases we have greatly improved sanitation. At Panama, the Commission found that in order to attract labor, and keep it on the Zone, they had to increase and, within a very few months, double the wages of the manual laborer. It does not take more than a moment of thought to show to you how such a measure acts and reacts. Results take place in many directions, but particularly with regard to increasing the ability of the people to live well and get better food and better clothing. While dwelling upon thoughts such as these, I came across Henry George's "Progress and Poverty." I was greatly impressed by the theory and was soon convinced that the single tax would be the means of bringing about the sanitary conditions I so much desired and was striving for. It was impressed upon me in a concrete form everywhere, in the United States in the tropics, and particularly in Panama; the great benefit that such a scheme of tax-

ation would confer upon sanitation.

In a city, such as Panama or Havana, the vacant lots and unimproved neighborhoods were the localities which always gave us most sanitary trouble. I was soon convinced that if any scheme were brought about whereby it would be disadvantageous for speculators to hold vacant places out of use, this scheme would be of the greatest value for sanitation. It was not possible to effect this change in method of taxation in the cities referred to. I discussed this method of taxation a good deal with the officials of Panama, urging upon them the desirability of a tax levy of this kind to cover expenditures brought about by the sanitary work. I finally got the Panama authorities around to the point of seeing the justice and advisability of such methods; but the organic law would have to be changed and this always takes time. I hope that something of the kind may yet come about in Panama.

The real scope of tropical sanitation which has been almost entirely developed within the last fifteen or twenty years, I believe, will extend far beyond our work at Panama. Everywhere in the tropics, to which the United States has gone in the past fifteen years, it has been shown that the white man can live and exist in good health. This has occurred in the Philippines, in Cuba and in Panama, but the demonstration has been most prominent and spectacular at Panama, and therefore has attracted there the greatest world-wide attention. Here among our large force of laborers we had for ten years some ten thousand Americans—men, women and children. Most of these American men did hard manual labor, exposed to the sun, rain and weather conditions day in and day out, yet during that time their health remained perfectly good, just as good as if they were working at home. The same remark as to health would apply to the four thousand women and children who lived at Panama with their husbands and fathers. Both the women and children remained in as good condition as they would have been had they lived in the United States. This

condition at Panama, I think, will be generally received as a demonstration that the white man can live and thrive in the tropics. The amount of wealth which can be produced in the tropics for a given amount of labor is so much larger than that which can be produced in the temperate zone by the same amount of labor that the attraction for the white man to emigrate to the tropics will be very great, when it is appreciated that he can be made safe as to his health conditions at a small expense. When the great valleys of the Amazon and of the Congo are occupied by a white population more food will be produced than in all the rest of the inhabited world.

But unless we can so change our economic laws, that this wealth will be more fairly distributed than it is now by the races occupying the temperate zone, mankind will not be greatly benefited. I hope and believe that ere this change in population comes about the single tax will have caused such changes in our economic conditions that wealth will be fairly distributed. I mean by fair distribution that condition in which each man gets exactly what he produces—no more, no less. This is all we single taxers ask. We do not wish any man to have a dollar more wealth than he himself has produced, or to take from any other man a dollar of the wealth that this other man has produced. We look forward to this time as not being so very far off, and when such time arrives, we believe that poverty will be abolished from this world, except in so far as there will always be some lazy individuals who will not work and who do not care to produce. But this number will not be so large as to affect the general principles just enunciated."

Scandal of Medical Licensure.

The newspapers, and particularly those of the East, have been arousing considerable public interest by their discussions of the licensure scandal in Connecticut. The Connecticut investigation followed the recent expose by the St. Louis Star of the ease with which a

diploma was purchased in Missouri. This expose directed the limelight on the serious conditions existing in other states, particularly Connecticut and Arkansas, which have been made the dumping ground of graduates of low-grade medical schools. For more than five years, The Journal has again and again warned these two states that their eclectic boards constituted a potential menace to their citizens. Moreover, provision for reciprocity between these and other states made these boards a menace to other states. Now that the scandal has burst upon the community, public interest has been aroused, and public officials have been encouraged to take action. The situation carries a lesson to every other state—a lesson that the Council on Medical Education and Hospitals and The Journal have been reiterating steadfastly and earnestly for more than twenty years. The only assurance for the people of any state that their physicians will be competent is a single standard of fundamental education for those who propose to treat the sick, and a single, nonpolitical examining board in each state to make sure that such persons meet the standard—*Jour. A. M. A.*, Dec. 8, 1923.

MEDICINE

Wm. B. Porter, M. D., Dept. Editor.

Treatment By Neglect.

Theodore Diller, Pittsburgh (*Journal A. M. A.*, Dec. 22, 1923), is of the opinion that there are patients who are examined far too much. The self-centered psychoneurotic delights in examinations, reexaminations and more examinations. And in these days of many clinical procedures and manifold laboratory tests there is great risk of overexamining certain of these psychoneurotics. There is a judicious neglect which the physician makes in his visits. It is extremely important and necessary that enough time be given to hear the patient's story; but it is a mistake to spend time in hearing repetitions of this story. While the first visit may be of

an hour's duration, the next one may be half an hour; and other visits of a minute and half may be most appropriate. There are times when the patient is much better visited once a week or once in two weeks rather than every other day. There is a type of psychasthenic patient that leans on drugs, and appliances or members of his family, and on his physician. He does the maximum leaning instead of the minimum leaning, and does not look forward to the time when he will not lean at all. The job of the physician is to lead him to lean less and less and, if possible, to walk alone and not lean at all.

Prognostic Value of Anemia in Chronic Glomerular Nephritis.

In twenty cases of chronic glomerular nephritis in which George E. Brown and Grace M. Roth, Rochester, Minn. (*Journal A. M. A.*, Dec. 8, 1923), found the creatinin value to be 5 mg. or above for each 100 c.c. of blood, a marked anemia was found. In this group the average hemoglobin was 48.5 per cent. (Dare) and the erythrocyte count was 2,950,000. Nineteen patients in this series died within ten months of the onset. One hundred and thirty-nine cases of chronic glomerular nephritis studied during the last two and one-half years are included in this report. All cases were excluded from this study in which marked complicating diseases, such as tuberculosis, malignancy, chronic sepsis, pyelonephritis and marked blood loss, were present, which in themselves could cause anemia. This study has convinced the authors that in this disease the presence of anemia in the degree indicated is of great prognostic importance. Of the thirty patients with no anemia, five died within two and a half years, a mortality of 18 per cent. Several of these deaths were due to cardiac and cerebral accidents, and could not be directly attributed to renal insufficiency. Of forty-six patients with moderate anemia nineteen died within from nine months to two and one-half years, a mortality of 46 per cent. Sixty-six of the seventy-eight patients with

marked anemia died during an observation period of from nine months to two and one-half years, a mortality of 85 per cent. There seems to be no doubt that a close relationship exists between creatinin retention and anemia (though no etiologic relationship has been demonstrated), and that impaired bone marrow and renal function is somewhat parallel in the later stages of the disease. The relationship is an inverse one. Patients with high blood creatinin values usually have correspondingly low hemoglobin values and erythrocyte counts. The authors are convinced that the bone marrow partakes of the generalized tissue injury, although the impaired function does not always run parallel to the impairment in other tissues. In this series of cases there were only two patients with continued absence of anemia with marked renal insufficiency. In certain cases on first observation, renal injury was definitely evidenced by increased nitrogen levels in the blood, but anemia was absent. A gradual decrease of hemoglobin and erythrocytes is found if these cases are observed over a period of from two to four weeks.

SURGERY

A. E. Baker, M. D., Dept. Editor

Gastroptosis.

The position of the normal stomach is subject to such wide variations in individuals who are apparently healthy that it is difficult to state just what constitutes "gastroptosis." While it is the popular rule to consider all stomachs whose pyloric thirds lie below the level of the iliac crests as being ptosed, yet the routine examination of large groups of individuals demonstrates that such positions of stomachs are by no means unusual or inconvenient. It would seem best to limit the term gastroptosis to those instances in which the ptosis is a part of a generally low-lying, gastrointestinal tract and in which definite signs and symptoms directly referable

to such unusual position can be ascribed. It is surprising, however, in how many such cases of markedly low-lying viscera there occurs no anomaly in secretion, motility or assimilation.

X-ray Examination—There is no clinical procedure that has created such unnecessary apprehension among both patients and physicians as has the ocular proof of the so-called "low-lying stomach." At the same time, to physicians of judicious mind and not of faddist mentality, the radiological studies have proved particularly instructive in teaching how wide may be the variations in the positions of stomachs and yet in such stomachs no malfunction exist. Gastroptosis has, however, become firmly established as a clinical entity in the minds of the laity mainly on account of roentgen examinations and the injudicious comments upon such by physicians who had certain types of treatment for this ailment. Many ingenious operations have been devised for the purpose of lifting and anchoring the so-called ptosed stomach to a position which according to physiology primers seemed correct, and many forms of medical regimen have been instituted with a similar object. With few exceptions the benefits of such treatments have been more apparent to the physician doing the treating, than to his patient.

Dr. Seal Harris in discussing Dr. Moody's paper on "Position of the stomach" said that he had been interested in the subject of visceroptosis for a number of years, because, ever since the advent of the roentgen ray, many patients have come with a diagnosis of "fallen stomach," and some have been led to believe that it is an operable condition. About three years ago, he and Dr. Chapman undertook a clinical and roentgenographic study of a thousand consecutive cases of gastro-intestinal diseases for the purpose of determining the normal position of the stomach and intestines. They found that in about 55 per cent gastroptosis was present—that the stomach, in the standing position, was more than 2 inches below the umbilicus. Conclusions were that the

position of the stomach has practically nothing to do with its function; that so long as the tonus of the stomach and intestines is normal, and so long as those viscera are freely movable, it is all right so far as the patient is concerned. It is the lack of tone rather than the visceroptosis that causes symptoms. They studied the same patients in the standing, prone and supine positions. They found that in some the lower border of the stomach would be resting on the brim of the pelvis in the standing position, but that in the supine position the stomach would gravitate upward above the umbilicus, to the so-called normal position. In other words, the contour of the spinal column and the smooth surfaces of the viscera enable the stomach and intestines to slide back into position, thus showing the folly of having the foot of the bed elevated in treating these cases. In the examination of the patients in the standing position, they found that voluntary contraction of the abdominal muscles would change an atonic stomach into a hypertonic one. The most important thing in the treatment of visceroptosis is to put on fat. When weight increases, the first place in which fat is deposited is the abdomen. In some cases in our experience, with the increase in fat, and increase in tone of the abdominal muscles, the stomach has been raised 2 or 3 inches. As to the value of exercise in these cases, these patients are usually what Bryan calls the chronic nervous invalid. They are in a state of chronic fatigue. If exercise is begun too soon, we increase the chronic fatigue. The patient should have a period of rest of three or four weeks and then begin graduated exercises, not only of the abdominal muscles, which are quite important, but general exercises. The abdominal belt is of very little value in these cases, except as a temporary measure. The most uncalled for operation in all surgery is gastropexy. I have seen a number of operations of this kind with bad results. It does the very thing that it ought not to do: It fixes the stomach or colon when it ought to be freely movable.

Visceroptosis goes back to our ancestors. They are responsible for this condition more than any one else. The atony that sometimes goes with it is a thing with which we can deal. Many of the finest men and women, those who are doing the great things in this world, are people who have visceroptosis. It is important to impress on the patient that it does not make any difference what part of the abdomen the stomach rests in; it is a question of tone.

Dr. Satterlee, New York: States that we are now finding out quite generally that the position of the stomach has no very important bearing on the general health, and also that we are coming more and more to regard the stomach as being one of the less vital parts of the gastro-intestinal tract.

The fact that patients said to be suffering from gastropotosis, after six weeks in bed with proper feeding and exercise, feel like new persons is not due to a change in the position of the stomach. Any run down, nervous person, put to bed for six weeks, with a forced diet and exercise, will be much benefited. The recovery of the patient is due to the improvement in the general condition, not to a change in the position of the stomach. Results further indicate that increase in weight of as much as 20 pounds has little effect on the position of the stomach.

Summary.—This low position of the stomach is seldom or never a cause of gastro-intestinal disturbances.

The low colon, lying in the true pelvis, is also normal, and is seldom or never the cause of gastrointestinal disturbance.

The strength of the abdominal muscles has little or no influence on the position of the stomach.

The use of the terms gastropotosis and coloptosis is seldom justified.

The common practice of putting patients to bed with a high diet and certain exercises prescribed to change the position of the stomach does not produce its beneficial effects by changing the position of the stomach.

Position of the Stomach, Liver and Colon.

R. O. Moody, R. G. Van Nuys, Berkeley, Calif., and W. E. Chamberlain, San Francisco (Journal A. M. A., Dec. 8, 1923), give the results of fluoroscopic and roentgenographic study of the position of the viscera in 600 healthy young adults, an equal number of men and women, most of them university students of California. Subjects with a history of chronic gastro-intestinal trouble or chronic constipation were excluded. The long stomach, commonly reaching from 3 to 7 cm. caudad of the interiliac line and often into the true pelvis, was found in 80.6 per cent of this group. This type of stomach, with its greater curvature dipping in some cases as far as 13 sm. caudad of the interiliac line and its lesser curvature dipping in some cases as far as 7.5 cm. caudad of the line, is normal. This low position of the stomach is seldom or never a cause of gastro-intestinal disturbances. The low colon, lying in the true pelvis, is also normal, and is seldom or never the cause of gastro-intestinal disturbance. The strength of the abdominal muscles has little or no influence on the position of the stomach. The use of the terms gastropptosis and celoptosis is seldom justified. With the subject standing the liver extends caudad of the interiliac line in a majority of the men and in a large percentage of the women. It reaches farther caudad in men than in women. The common practice of putting patients to bed with a high diet and certain exercises prescribed to change the position of the stomach does not produce its beneficial effects by changing the position of the stomach.

called idiopathic cases. Of the causative factors in the former group may be mentioned, irritating discharges from the cervix and vagina, irritating urine—diabetic or in pyuria, incontinence of urine and scabies. Of the idiopathic cases, a certain number show evidence of nervous imbalance—"neurotic" young women, and patients at or near the menopause—and the itching or crawling sensation complained of have their origin in the highly developed egocentric personality. Occasionally, the pruritis seems to be the result of excessive dryness of the parts due to the abuse of douches—frequent douching and especially with "antiseptic" solutions—resulting in a diminution of the normal mucous output of the glands.

Whatever the cause, the result is often the same. The itching is followed by scratching and rubbing with consequent abrasions of the skin and mucosa of the labiae, low grade infection and finally an exzematous condition. Thus in many of the cases, the etiological factor has long since disappeared but the vicious cycle of itching, scratching, more itching, more scratching has produced an irritation of the cutaneous nerves and even neuromata.

The symptoms are usually worse after retiring for two reasons—first because the heat of the bed clothes increases the itching and second that the patient's mind is free to occupy itself with the condition and the parts are readily accessible to scratching. The distress is so great that the sufferer is willing to undergo any treatment that offers relief.

The exhibition of habit forming drugs either by mouth or locally as in cocaine suppositories is to be avoided as in all chronic irritative conditions. After removal of the cause, many cases yield rather readily to local treatment with soothing solutions—as compresses of aluminum acetate, or to protective ointments—as zinc oxide, or to frequent dustings with bismuth subnitrate and starch, equal parts.

There remains, however, a certain group of women who are unrelieved by

Gynecology and Obstetrics

Robert E. Seibels, M. D., Dept. Editor

Pruritis Vulvae.

Patients with pruritis may be divided into two groups. Those in whom an obvious etiological factor exists, and so-

ordinary methods. Weiner, (S.G.O. 1923, XXXVII, 843) described them as being at or near the menopause: "The vulva is more or less atrophic, the skin is infiltrated and has often a greyish-red, somewhat glazed, appearance." His technique is simple—the skin and subcutaneous tissue along the outer border of the labia majora are continuously infiltrated with a one per cent solution of novocain; 8 c.c. are used; 4 c.c. being injected on each side. The good results are to be attributed to the mechanical effects of the infiltration plus a break in the vicious circle of itching and scratching. In some cases more than one injection had to be done to effect permanent relief.

Mental and Nervous

James K. Hall, M. D., Dept. Editor

Veronal Poisoning.

In The Journal of the American Medical Association of November 3, 1923, Dr. Irving J. Sands, who is an instructor in Neurology in Columbia University in New York, contributes an article on Veronal Intoxication. The drug has been in use since 1903. It is diethylbarbituric acid and it is also known as barbital. Veronal is a proprietary name. The drug is relatively cheap; it can be purchased at any drug store without a prescription; it induces sleep; and there is a general feeling that it is harmless when used for that purpose. Many individuals obtain it and use it only at night for the purpose of combating insomnia; others use it regularly—in other words, are veronal habitués—for the purpose of deadening their sensibility and their appreciation of things, so that they may live more or less obtunded lives in order to escape the feeling of responsibility. These folks take the drug habitually for the purpose of escaping what the psychiatrist calls the feeling of reality.

The physiologic effect of the substance has been fairly definitely established as the result of animal experimentation, clinical observation, and post mortem

investigation. When the individual is poisoned by veronal the capillaries and the smaller blood vessels are dilated, the blood flows more slowly, the heart action is slowed, the blood pressure is lowered, temperature is reduced, and gas exchange between the tissues and the blood in the capillary region is reduced. In other words, the removal of carbon dioxid is retarded, and oxygen experiences delay in reaching the tissue cells. This dual fact, in the opinion of Sands, accounts for the sleep-inducing property of the drug.

The poisonous effects of the drug are encountered in both the acute and the chronic forms. In persons peculiarly susceptible poisoning may be produced by 5 or 10 grains; as a rule, however, from 40 to 50 grains are necessary to produce striking toxic effects. In cases of acute poisoning there is generally coma, flushed face, cyanotic lips and extremities, sometimes slow, sometimes a rapid, pulse, usually lowered blood pressure, slowed breathing, cold body-surface, coated tongue, foul breath, dilated pupils, absent deep reflexes, and obstinate constipation. The urine is diminished in quantity; there are usually casts and albumin. As soon as consciousness begins to return, there is slurring, almost unintelligible, speech; ataxia, unsteady gait, irritability, often delusions, self-assertiveness, and a tendency to be troublesome and to give fight. The individual has no appreciation of his abnormal condition. Slowly he returns to mental and to physical normal, and within a ten-day period, as a rule, convalescence is complete.

But in many individuals this recurrent tendency to find sleep, or the seductive, drowsy, dreamy, mental numbness that keeps the troubles and the problems of life from sinking in, becomes more and more pronounced, and these persons become veronal addicts. They develop the habit of taking the drug throughout the day, and many of them take from 30 to 50 grains of the drug during the twenty-four-hour period. In these cases both mentality and body are affected. They are drowsy, stupid, indifferent, they do not fully comprehend,

consequently, the day's troubles and responsibilities mean little to them. Their attention is poor, memory for recent affairs is impaired, often there is irritability, outbursts of temper, rambling, incoherent speech, sometimes active delusions, and purposeless restlessness. In the physical domain there is the staggering, unsteady gait, not unlike that of alcoholic intoxication, drawling, indistinct speech, persistent cyanosis, and sometimes a skin rash. The circulatory disturbances like those of the acute poisoning, but less pronounced, are present, and the temperature is apt to be subnormal. The general condition, mental and physical, in these chronic veronal intoxications, frequently must be differentiated from organic nervous conditions, e. g., paresis, sleeping sickness, or brain tumor. In this condition pneumonia, probably because of the passive pulmonary congestion, is peculiarly prone to develop. (William deB. MacNider long ago called the reviewer's attention to the possibility of fatty degeneration of the liver cells in this condition, and Sands, likewise, speaks of the same tendency.)

Acute veronal poisoning is most likely to be found in the manic-depressive type of person; the individual who feels down and out, frequently after an alcoholic debauch, or because circumstances are for other reasons adverse.

Chronic intoxication by this drug is encountered in the emotionally unstable individual,—the person who is inherently inferior in mental and emotional equipment. After detoxicating treatment has been carried out then the individual must be dealt with—and this phase of the problem is most difficult.

Five cases of acute veronal intoxication are presented in detail. Recovery took place in each, although as much as a hundred grains of the drug had been taken in each instance in a single dose.

The treatment should consist of elimination, the application of heat to the body, and the administration of stimulants. The inhalation of oxygen is helpful in the acute cases. As a step in preventive treatment, Sands thinks the sale of the drug should be allowed only

when ordered by a physician's prescription, and that the drug should be designated by the words, diethylbarbituric acid.

Science or Sociability?

Just as the welfare of society—in religion, in politics, in economics, in happiness—is dependent upon the quality of the individual home—the smallest social unit—even so is the welfare of organized medicine dependent upon the character of the smaller medical organizations. The large medical societies are necessary—just as essential, for instance, as the congress, and for the same reason: that the views of the people as a whole may find expression. But few can reach the congress, either as members or for purposes of observation. Democracy has its roots in the free expression of the groups of two or three gathered together here and there.

An infinitesimally small number of the physicians of the nation are ever able to attend the meetings of the national medical gatherings. The small medical organization constitutes the basis of the hope of organized medicine. Surrounded by his own kind, free to give untrammelled expression to his own views, the average doctor feels most at home when so situated. But the specialist who attends meetings in which only his own specialty is talked about is as surely shutting the light out of his mind as the light is shut out of the eye by the concentric contraction of the iris diaphragm of the microscope. The physician who shuts out of his consideration all but the tiny objects seen in the small, round field eventually ceases to be a doctor, and degenerates into a technician—whatever that may be. The physician who feels it his duty to guard his flock against disease must be on the alert, and it is just as necessary for him to sweep the medical cyclorama for signs of danger as it is for the mariner to view the unlimited expanse about him with his far-seeing glasses.

Those of us who dwell in the medical coves and valleys must ask occasionally the watchmen on the hilltops and the

mountains what sights they see. The purpose of the medical meeting is to enable each to make report to the other. A convocation for such purpose has no need of preliminary exercises. The address of welcome, the response, the invocation, should be dispensed with. The reputable physician is a welcome guest into whatever home or assembly he may come. His daily life should be an unending prayer. Medical meetings should not be distracted by so-called entertainments. The doctors and their wives in the towns in which medical societies meet should be saved the annoyance and the distraction and the expense of providing entertainment for visiting physicians. The purpose of a medical meeting is to improve the professional skill of the attending members. It is earnestly hoped that medical meetings in the South may become more and more scientific and less and less social organizations.

Personal feeling manifests its unhappy influence in our discussion of papers. We either attempt to distract from the presentation of the doctor whom we dislike or else we treat his paper with quiet unnotice. We are often laudatory of the worthless words of our friends. May we not be a little more true to ourselves, and to Truth? May it not become possible for us to consider the theme apart from its author? Should not the discussion of a medical paper have for its purpose one of two objects: either to correct some error in the paper, or to add to some truth stated by it? Verbrose laudation of a worthless paper is of no avail; attack upon an author by disparagement of his output is the manifestation of a small, cowardly mind. Pure science in the South is in need of more friends: all physicians should be her advocates and protectors.

The next meeting of the Tri-State Medical Association will be held in Greenville, S. C., February 20-21, 1924.

Urology

A. J. Crowell, M. D., Dept. Editor

I wish to call special attention to a paper, by Dr. Oswald S. Lowsley, of New York City, in the November number of Surgery, Gynecology, and Obstetrics on "Major Surgery Under Sacral and Parasacral Anaesthesia."

He analyzed 76 cases operated as follows: Fifty perineal prostatectomies, five seminal vesiculectomies, three Young punch operations, five urethrotomies, one hydrocele, and eight cystoscopies. All except six of these cases were entirely successful. In one seminal vesiculectomy, it was necessary to give a few whiffs of ether during the last five minutes of the operation. In one perineal prostatectomy a little gas or ether should have been used about the same length of time but because of the patient's age (86) and feeble condition it was not given. None of the other cases were more than moderately uncomfortable and when questioned after the operation as to whether or not the operation was really painful, the usual answer was "not so bad." In a case of excision of the hydrocele sac the cord had to be blocked off with novocaine as it emerged from the external ring. (The nerve supply here is different).

In two of the unsuccessful cases he attempted some deviation from the routine method of procedure. He found that parasacral infiltration alone was not sufficient. One per cent novocaine in the sacral canal was also a failure. Two per cent is used here and one per cent for parasacral injection.

In the seventy thoroughly successful cases the operation was without pain. He observed that the bleeding during prostatectomy was much less under sacral anesthesia than when ether and gas were given. This is due to the fact that the blood pressure is not so high under sacral anaesthesia.

Untoward Symptoms.

Two cases had short periods of excitement. One had spasmodic contractions of the legs lasting about one

minute. Two others became flushed and somewhat confused temporarily. Most of the cases had an increase in pulse rate. The untoward symptoms in all cases appeared immediately after the injections were given. This is the result of injecting some of the solution into the blood current. Every precaution should be taken to avoid this accident. Respiratory paralysis is likely to follow such an occurrence.

In one case of seminal vesiculectomy, Dr. Lowsley found the anesthesia in one hour and twenty minutes had so worn off that it was necessary to give ether for a few moments to complete the operation.

No deaths occurred in his series of cases and no complications following operation. He believes the shock to the entire body mechanism is considerably reduced by avoiding inhalation anaesthesia.

He concludes, as a result of his own observation and the experience of others, that:

1. Sacral combined with parasacral anaesthesia is the anaesthesia of choice in performing major urological operations per perinaeum, particularly prostatectomy.

2. In perineal prostatectomy under this type of anaesthesia there is less bleeding and less shock than there is with any inhalation anaesthesia.

3. It is apparently safe and effective if given properly.

Orthopaedics

Alonzo Myers, M. D., Dept. Editor

Tuberculosis of the Os Coccygis.

Two cases of this condition are reported by Vernon C. David, Chicago (Journal A. M. A. Jan. 5, 1924). The ages of these two patients were 47 and 60, respectively. In neither of these two cases was a history of trauma present; nor was there any known reason for localization of the tuberculous process in the os coccygis. It might be supposed that a tuberculous process in the bowel was primary and the in-

volvement of the bone secondary. Opposing this view are the facts that the lesions in the bowel were more recent than the bone changes in both cases, as the coccyx was completely sequestered. In addition, primary tuberculosis of the rectal mucosa without pulmonary or other intestinal tuberculosis is extremely rare. Lastly, the rectal lesions were not active ulcerative processes, but were openings of fistulas into the lower bowel. The treatment of tuberculosis of the coccyx is removal of the coccyx by an incision over it. Jean Louis Petit reported the first case in 1790, and resected the coccyx. In nineteen cases in which the coccyx was resected, as reported by Darrah, sixteen of the patients recovered. In both of the cases reported in this paper the patients are symptomatically and generally well, but each one has a small sinus reaching from the incision to the bed of the coccyx. These sinuses are getting smaller, and seem to have every prospect of closing. Where the abscess has opened into the rectum, a subsequent plastic operation to cover the defect may be necessary. The operation proposed by Eting, of sliding a flap of mucosa over the opening in to the bowel, would be adaptable for this purpose.

Backache.

The causes of chronic backache are discussed by W. E. Shackleton in the July, 1923, issue of the Illinois Medical Journal, page 36.

The more chronic types of backache include the ache of constitutional diseases and toxæmia, reflex backache, postural backache, and backache due to local conditions. Static backache is due to excessive strain and stress on the muscles and ligaments of the back. This occurs in persons who have been confined to bed for several days and in those who have been placed under the influence of an anaesthetic. Pain results from overstretching the ligaments which, when unsupported by the muscles, are not strong enough to maintain the normal lumbar curve. Spondy-

litis deformans is the common postural defect of old age. It is not necessarily due to infection. Habitual labor in an unnatural position causes backache. Compensatory spinal curvature or muscular hypertrophy is frequently seen among laborers. The shortening of an extremity from a fracture, coxa vara, hip disease, or uneven growth is another cause of backache.

Backache follow fevers, tonsillitis, syphilis, influenza, small pox, tuberculosis, focal infections, metabolic disorders, and toxæmia due to intestinal absorption. These are difficult to explain except on the basis of a loss of muscle tone.

Reflex backache is due entirely to involvement of the pelvic viscera, the sensations being reflected through the ganglion and felt as pain in the corresponding somatic segment. As it descends from the intervertebral foramen, the lumbosacral cord passes over the pelvic brim and is therefore subject to the pressure of pelvic or abdominal tumors or organs. Local conditions causing backache may be metastatic, infectious, or traumatic. Myositis is the most common. Usually this is caused by direct violence. Tumors of the back which cause backache are usually metastases from a primary carcinoma of the uterus, prostate, or breast; an X-ray examination is usually essential for the diagnosis.

The chronic infections of the spine are osteoarthritis, osteomyelitis, tuberculosis, and syphilis. Osteomyelitis is not a common spinal lesion and is usually metastatic from osteomyelitis of other bones. Tuberculosis of the spine is very common. Syphilis of the spine is a disease of adult life.

Congenital malformations may cause backache. The common malformations include spina bida occulta, segmented sacrum, and anomalies of the transverse processes of the fifth lumbar vertebra. Chronic backache may be caused by injuries. Spondylolisthesis or forward dislocation of the fifth lumbar vertebra on the sacrum is a cause of chronic backache. It results usually from the slipping and twisting of the body dur-

ing the carrying of a heavy load.

Sacro-iliac subluxations are static and traumatic. In cases of the traumatic group there is a definite history of direct or indirect trauma, such as a twist or a fall on the feet or buttocks.

Compression fractures are fairly common. They may become chronic because undiagnosed. X-ray examination in the oblique, the antero-posterior, and the lateral positions will aid in the diagnosis.

Hospital and Sanatorium

John Q. Myers, M. D., Dept. Editor

American Hospital Association Acts to Keep Nursing on a Professional Basis.

Because the National Personnel Re-classification Board has placed nurses in Government hospitals in a non-professional classification the Committee on Resolutions of the Association presented the following resolution which was adopted at the annual meeting of the Association:

Whereas, It is a recognized and important function of Hospitals, of which this Association is the organized representative, to establish and maintain Schools of Nursing which shall provide professional, scientific and technical training in methods of caring for the sick and cooperating with the medical profession in preserving health and saving lives, and to constantly endeavor to place nursing service in a condition of highest efficiency and to that end to represent to women of intelligence and capacity that the education thus offered will enable them to pursue a career of high opportunity and responsibility, carrying with it the honor and respect of all people, and

Whereas, The obligations of a nurse to the patient, to the medical profession and to any public service in which she may engage are such as to require a high sense of professional duty which cannot be inculcated by monetary reward, and

Whereas, It is essential to Hospitals that such sense of professional obligation shall continue and abide with all nurses in their employ and equally essential to the employment of nurses in any public or private service.

Now, Therefore, Be it Resolved:

That the representatives of Hospitals in the United States, here assembled in convention of the American Hospital Association, do urge upon all representatives and agencies of our government that nurses, properly accredited as such by duly constituted authorities, shall be recognized as belonging to a profession rather than a trade or occupation, and further,

That we do most emphatically protest, on account of our own needs and for the welfare and safety of the people in general, against any rule, regulation, enactment or classification which shall place such nurses in a lower position than that which they have long and universally and justly occupied;

And be it further Resolved, That the Executive Secretary be instructed to forward copies of this Resolution to the Personnel Classification Board established under Chapter 265 of the Act of the Sixty-seventh Congress and to the American Nurses' Association, and in the event of any attempt to make any classification or to procure any legislation contrary to the spirit and meaning of this resolution, to take such action as the Trustees of this Association may find expedient to inform our representatives in Congress and other persons in authority with regard thereto.

News Items

The Seaboard Medical Association held its annual meeting in Newport News, Va., Dec. 5, 6 and 7. The Warwick Medical Society was host and treated the association royally. The papers were the very best and the discussions animated. Officers elected for 1924 are President, Dr. Wm. E. Warren, Williamston, N. C.; Vice-Presidents, Dr.

James W. Hunter, Norfolk, Va.; Dr. Geo. A. Caton, Newbern, N. C.; Dr. Robt. A. Davis, Newport News, Va.; Dr. B. C. Willis, Rocky Mount, N. C.; Treasurer, Dr. Geo. A. Caton, Newbern, N. C.; Secretary, Dr. C. P. Jones, Newport News, Va. The next meeting will be held at Rocky Mount, N. C., Dec. 2, 3 and 4, 1924.

The Buncomb County (N. C.) Medical Society, at its meeting Dec. 17, elected the following officers: Pres., Dr. L. W. Elias, Asheville; vice-Pres., Dr. C. C. Orr, Asheville; Sec. Treas., Dr. R. A. White, Asheville.

The Mecklenburg County (N. C.) Medical Society at its meeting Dec. 11, elected the following officers: Pres., Dr. J. Q. Myers; Vice-Pres., Dr. S. M. Henderson; Secy.-Treas., Dr. John P. Kennedy.

Guilford County Medical Society. An unusually large attendance marked the first meeting in 1924 of the Guilford County Medical Society held at the County Court House at 8 o'clock Thursday evening, Jan. 3, with Dr. F. R. Taylor, of High Point, the newly elected president, presiding.

The reading of a paper on "X-rays and their Therapeutic Application," by Dr. Joseph Shohan; an address by Dr. J. W. Long, on "Our Society and What It Means To Us"; an address by Dr. J. T. Burrus, in which he stated that he would donate a part of the library of the late Dr. H. W. McCain, of High Point, (which he had recently purchased), to the library of the county society, were the features of the program.

Dr. D. W. Holt, secretary-treasurer of the Society, called attention to the sectional meeting of the American College of Surgeons to be held at the Robt. E. Lee hotel, Winston-Salem, Feb. 4 and 5. Members of the Guilford County Medical Society are invited to attend.

Dr. W. J. Meadows, chairman of a special committee appointed to suggest methods for stimulating interest in the work of the society and for increasing the attendance at the meetings, submitted a report. The committee suggest-

ed that at future meetings the program be arranged so as to include papers on important subjects by two well informed medical men, one to be a member of the local society and one to be from out of the county. The suggestion was adopted unanimously. Serving on the committee with Dr. Meadows, were Dr. Walt Cole and Dr. Harry Brockman.

The next regular meeting will be held at High Point the first Thursday evening in February.

The Randolph County (N. C.) Medical Society has elected the following officers: President, Dr. C. C. Hubbard, Farmer; Vice-President, Dr. W. J. Moore, Asheboro; Secretary-Treasurer, Dr. W. L. Lambert, Asheboro. Drs. Moore, Summer and Lambert were appointed to present clinical cases at the next meeting following the plans used in the extension course the past summer.

Raleigh Academy of Medicine entertained by its President, Dr. Milton R. Gibson, at his home. After a four-course dinner Prof. A. F. Bowen entertained the guests with slight of hand performance. Twenty-four guests were present.

Mecklenburg County Medical Society's newly elected President, Dr. J. Q. Myers, entertained the members of the society and a few visiting physicians at buffet dinner during the holiday season. One hundred and thirty-five guests voted it a most pleasant evening.

The Eighth Annual Clinical Session of The American Congress on Internal Medicine will be held in the Amphitheatres, wards and laboratories of the various institution concerned with medical teaching, at St. Louis, Mo., beginning Monday, February 18, 1924.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session. Address inquiries to the Secretary-General, Dr. Frank Smithies, 1002 N. Dearborn St., Chicago, Ill.

Clinical Congress of American College of Surgeons, North and South Carolina section, will hold its annual meeting at Winston-Salem, Feb. 4-5. A splendid meeting is promised.

Dr. A. J. Crowell entertained Charlotte doctors at dinner December 27. There were present about one hundred and it was an unusually pleasant evening.

Dr. Alonzo Myers and Miss Eleanor Grace Gurney, both of Charlotte, N. C., were married Dec. 17 at the former home of the bride in New York. After a 'two-weeks' wedding trip to the Bermudas they returned to Charlotte and are now at home in the Jefferson apartments.

Dr. Parran Jarboe, Greensboro, N. C., announces the removal of his offices to the Jefferson Standard building.

Dr. Robert S. Carroll, of the Highland Hospital, Asheville, N. C., will spend a year studying and traveling in Europe and the Orient.

Dr. Everett S. Barr, until recently medical head of the Philadelphia Hospital for Mental Diseases, will have charge of the Highland Hospital during the absence of Dr. Carroll.

Dr. A. M. Redfern, for twenty years resident physician at Clemson College, died at the Presbyterian Hospital, Charlotte, N. C., Dec. 4th, 1923. He was born at Wadesboro, N. C., 62 years ago.

Colorado Medicine has new editor. Dr. C. S. Bluemel, 509 Imperial Building, Denver, Col., assumed the management of this journal Jan. 1st. We wish for him every success and feel sure that Colorado Medicine will continue to prosper under his direction.

Dr. H. Orlando Bell has been appointed medical inspector of the Richmond Bureau of Health, to succeed Dr. Henry E. Davis, resigned.

Dr. F. C. Craven, formerly of Ramseur, N. C., has moved to North Wilkesboro, N. C., and will engage in Eye, Ear, Nose and Throat work.

Dr. E. B. Meadows, Oxford, N. C., died December 2. He was 48 years old and a graduate of the University College of Medicine, Richmond, 1901.

Dr. John M. Sease, Little Mountain, S. C., died Nov. 28. He was 62 years old and a graduate of the University of Maryland School of Medicine, 1886.

Dr. William T. Oppenheimer, Richmond, Chief Surgeon of the C. & O. Ry., was presented with an automobile at the annual meeting of the Association of Surgeons of that road.

Dr. S. Josephine Baker, of New York, has been appointed as consulting director in Maternity and Infancy and Child Hygiene of the Children's Bureau of the U. S. Department of Labor is announced by Grace Abbott, Chief of the Bureau.

Dr. Baker is known as one of the foremost authorities in the nation in the field of child health. Her resignation last spring from the position of Director of the Bureau of Child Hygiene of New York City Department of Health, came after twenty years of pioneer work for the welfare of the mothers and babies of New York, during which the infant mortality rate in New York was reduced from 144 per thousand live births to 75, little more than half the former rate.

Dr. Baker organized the Child Hygiene Division of the New York City Health Department in 1903. At that time it was the first bureau of its kind to be established in the United States, and it also antedated the Children's Bureau. Since then nearly every state has established such a bureau or division.

Dr. Barker's work, through the Children's Bureau, for the mothers and babies of the nation, will lie chiefly in advice in the determination of policies and the planning of work, and in the writing of reports.

The Public Health Nurses of South Carolina held an institute at Columbia December 3 to December 15, which was

conducted under the auspices of the State Board of Health. In addition to the regular institute classes there were a number of sessions for the general public. These meetings were addressed by speakers of wide reputation. Among them being Dr. J. S. Crumbine, Dr. Howard E. Rondthaler, Dr. James A. Hayne and Prof. J. H. Hope. Nurses were in attendance from practically every county of the state.

Dr. Charles Henry Esdorn, Walterboro, S. C., died Nov. 13. He was born 1879 and graduated from from S. C. Medical College 1901.

The **Mary Elizabeth Hospital**, Raleigh, announces the association on its staff of Dr. Verne S. Caviness, Diagnosis and Internal Medicine and Dr. Powell G. Fox, General Medicine.

Dr. R. L. Carlton, Winstan-Salem, and **Dr. Charles Armstrong Salisbury**, N. C., have been awarded resident and travel scholarships to permit them to specialize in various aspects of child health activities. These scholarships were awarded by the American Child Health Association. There were 101 applicants for the 15 places awarded.

Dr. Richard H. Meade, Jr., Richmond, has been appointed a medical missionary to St. James Hospital, Nanking, China. Dr. Henry R. Taylor of Norfolk, is in charge of the hospital.

Publications Received

The Care of the Baby, a manual for mothers and nurses, containing practical directions for the management of infancy and childhood in Health and Disease, by J. P. Crozer Griffith, M.D., Professor of Pediatrics in the University of Pennsylvania; seventh edition, thoroughly revised. W. B. Saunders Co., Philadelphia.

The author discusses the hygiene of pregnancy and prenatal care, the characteristics of a healthy baby and the growth of its mind and body. Succeeding chapters relate to the methods of bathing, dressing, feeding at different ages, hours of sleeping, physical and mental exercise, etc. A book which can with propriety be loaned to mothers and prospective mothers.

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Diseases of The Skin, by Richard L. Sutton, M.D., LL.D., Professor of Diseases of the Skin, University of Kansas, Dermatologist to the Christian Church Hospital, etc., 1214 pages, 1069 Illustrations, eleven color plates, C. V. Mosby Co., St. Louis, Mo. Price \$10.00. Fifth Edition, thoroughly revised.

To the general practitioner and the man interested in skin conditions this work is most valuable. The illustrations are so expressive and the text so complete that dermatological diagnosis has been made comparatively easy. The author divides his subject into eleven classifications after first discussing in a general way, the anatomy of the skin, physiology, general etiology, symptomatic, diagnosis and treatment.

His classification is, Hyperemias, Inflammations, Hemorrhages, Hypertrophies, Atrophies, Neuroses, New Growths, Diseases of the Appendages, Paracitic Infections, Anomalies of Pigmentation, and Diseases of the Mucous Membranes Adjoining the skin.

The six hundred literary references will be of value in an exhaustive investigation of any particular subject.

Applied Bacteriology For Nurses, by Charles F. Bolduan, M.D., Surgeon (R) U. S. Public Health Service; Formerly Lecturer on Preventive Medicine and Hygiene, College of Physicians and Surgeons, New York City, and Marie Grund, M.D., Bacteriologist, Research Laboratory, Department of Health, City of New York. Fourth edition thoroughly revised. 12mo 195 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, \$1.75 net.

A Practical Text-Book of Infection, Immunity and Biologic Therapy with special references to immunologic technic. By John A. Kolmer, M.D., Dr. P.H. Professor of Pathology and Bacteriology in the Graduate School of Medicine, University of Pennsylvania, with an introduction by Allen J. Smith, M.D., Professor of Pathology in the School of Medicine of the University of Pennsylvania. Third Edition, thoroughly revised and mostly rewritten. Octavo of 1210 pages containing 202 original illustrations 51 in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, \$12.00 net.

The first two editions were universally commended by all reviewers and this third edition has been thoroughly revised and brought up to date. New chapters have been added discussing Allergy in Relation to Infection and Immunity, Clinical Allergy, Allergic Skin Treatment of Human Allergies, and the Schick Test for Immunity to Diphtheria.

The chapters on vaccine and serum therapy have been extensively revised and non-specific protein therapy has been included.

Many other new chapters have been added and the last sections are given over to outline of the course which the author gives the students in the Graduate School of Medicine at the University of Pennsylvania.

Introduction to Medical Biometry and Vital Statistics. By Raymond Pearl, Ph.D., Professor of Biometry Vital Statistics, Johns Hopkins University. Octavo of 397 pages, illustrated. Philadelphia and London: W. B. Saunders Company, Cloth, \$5.00 net.

The author does not claim for this work more than an introduction to the subject of Biometry—rather a simple exposition of the basic elements of the subject. It has been written primarily for the medical reader and gives a carefully selected list of references for those who choose to pursue the subject more exhaustively.

American Illustrated Medical Dictionary (Dorland). A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science Nursing, Biology, and kindred branches; with the pronunciation, derivation, and definition. Twelfth Edition, revised and enlarged. Edited by W. A. Newman Dorland, M.D. Large octavo of 1296 pages with 338 illustrations, 141 in colors. Containing over 3000 new words. Philadelphia and London: W. B. Saunders Company, 1923. Flexible leather, \$7.00 net; thumb index \$8.00 net.

One of the best and more usable dictionaries we have seen. Flexible covers, thin paper and good type. This edition contains over 3000 new words, the definitions are fully expressive yet brief. The revision was made by Dr. E. C. L. Miller, who checked every chemical word in the book including all drugs and proprietary medicines.

Neurologic Diagnosis. By Loyal E. Davis M.D., Associate Professor of Surgery, Northwestern University Medical School; Fellow of the National Research Council. 12mo of 173 pages with 49 illustrations. W. B. Saunders Company, Philadelphia and London: 1923, Cloth, \$2.00 net.

This book presents the subject of neurologic diagnosis from the viewpoint of correlating symptoms with known anatomic and physiologic facts.

Case histories are preceded by a brief review of various important anatomic structures.

Rhus Dermatitis (Poison Ivy), its Pathology and Chemotherapy, by James B. McNair, 298 pages illustrated. The University of Chicago Press, Chicago.

This is a scientific and authentic treatise of the poisoning by the different species of Rhus. The author has exhaustively studied the cause of this plant irritant. He has made a comprehensive study of the poison in the plant, its origin and occurrence, its seasonal variations and its transmission from plant to person. He discusses with particular care the chemistry of the poison, the pathology of the resultant disease during the different stages, the after effects and recurrence and finally definite treatment and remedies presented from a strictly scientific point of view.

Rubber and Gutta Percha Injections, by Charles Conrad Miller, M.D., 99 pages illustrated. Price \$1.75. The Oak Printing & Publishing Co., Chicago.

Dr. Miller handles this subject in a very impartial and unprejudiced manner. He describes the pitfalls and dangers attendant the use of rubber for plastic surgery as well upon the desirable features. The technic of preparing the rubber paste as well as the technic of its injection are described.

Alcohol and Prohibition In Their Relation to Civilization and the Art of Living, by Victor G. Vecki, M.D., 165 pages. J. B. Lippincott Co., Philadelphia. Price \$2.00.

Dr. Vecki gives a very clear exposition of the prohibition question. He shows the legitimate use as well as the abuse of alcoholic beverages. He shows what has been accomplished so far by prohibition and who has been benefitted by its enforcement.

The first chapter deals with alcoholic beverages in general and from there the author goes on to discuss the two sides of the alcohol question. There are chapters on prohibition in relation to the constitution and in relation to personal liberty, on prohibition as it effects the medical profession. The author brings out the fact that the keynote of happiness is temperance in all things, and that temperance in prohibition is equally as desirable as temperance in drinking or eating.

Pruritus of the Perineum (Pruritus ani, vulvae and scroti), by Joseph Franklin Montague, M.D., of the Rectar Clinic, University and Bellevue Hospital Medical College, 186 pages, illustrated. Price \$3.50. Paul B. Hoeber, Inc., Publishers, 67 E. 59th St., New York City.

Dr. Montague has in this monograph presented a very thorough exposition of the whole subject. For the past several years he has devoted himself to the investigation of this disease, and the thoroughness of his work is quite evident in this volume. A book which will be very helpful to specialists and to general practitioners as well.

TUMORS OF THE INTESTINES CAUSING INTUSSUSCEPTION. CASE REPORT. (Lantern Slides.)

By Dr. John Kennedy, Charlotte, N. C.

I wish to report two cases of intussusception due to intestinal tumors. The tumors are comparatively so rare as intestinal tumors, as to justify their report in some detail. Following this I wish to discuss briefly intussusception produced by such tumors.

Case 1. A married woman of 40 years was admitted to the Charlotte Sanatorium June 8, 1922, complaining of severe abdominal cramps and vomiting.

P. I. Has been sick three weeks with marked soreness in the right side of the abdomen which gradually became worse and she felt as though something was being pulled apart inside. Later developed cramps across the lower abdomen and then in the epigastrium. Thirty-six hours before admission began to vomit and has kept this up. The vomitus was not of a fecal nature.

P. H. Has had similar but less severe attacks in right side over a period of seven years. She has been badly constipated most of her life. Has never passed blood nor mucus from the bowel. Her weight, 140, had remained approximately the same over a period of years. Examination on admission showed a rather stout woman with pulse 140, temperature 101 and respiration 20. Looks toxic and suffering with abdominal cramps which come on frequently. Abdomen rather fat with considerable distention, marked rigidity of muscles of right side and quite tender.

A preoperative diagnosis of appendicitis or gall bladder disease was made with a leaning to empyema of the gall bladder. Operation June 8, 1922. Drs. Pressly and Kennedy. Abdomen opened through right rectus incision. Gall bladder was normal. In looking for the appendix a mass was felt in the right mid-abdomen which when pulled into view was found to be an intussusception of the caecum, appendix and ter-

minal ileum into the ascending colon. The bowel was easily reduced but quite inflamed, and in the wall of the caecum two inches above the base of the appendix was a large, rather hard mass about the size of an apple. There were no palpable glands. The tumor was thought to be malignant and accordingly the caecum was resected, using the cautery, inverting the cut ends of the ileum and colon with purse string sutures and doing a side to side anastomosis by the no-clamp method.

The patient made a good recovery and went home on the fifteenth day. In nine months time she has gained 17 pounds and has not been constipated a day since her operation.

Pathological report on the tumor by Dr. H. P. Barret: "Sections show a tumor composed of fatty tissue and arising, apparently, from the submucous coat of the intestine. The tumor is densely packed with polymorphonuclear cells, and the fibrous stroma is almost completely replaced by the cellular and fibrinous exudate present. The mucous membrane covering the tumor is completely necrotic and has lost its ability to take the strain. Diagnosis: Lipoma."

Lipomata of the intestine are comparatively rare as is shown by the fact that only six cases were reported by King from the records of the Mayo Clinic up to 1917 out of 44,654 abdominal operations. Although so rare, their surgical significance is shown in Treves statement that lipomata are found in 8 per cent of all intussusceptions and in the added fact that Stetten found intussusception complicating 60 per cent of 67 lipoma cases reviewed by him in 1909.

Case 2. A man of 48 was admitted to the Charlotte Sanatorium Aug 9, 1922, complaining of severe upper abdominal cramps and weakness from loss of blood by bowel.

P. I. April, 1922, four months before admission, was taken sick with severe upper abdominal cramps and copious hemorrhages by bowel. The bleeding was so severe that he says he was given large doses of morphia to control it. Has been up and down since but under the care of his physician.

P. H. Since 1906 has had several attacks



Fig. 1. Case 1. Lipoma of Caecum. Mucous membrane covering tumor largely gone.

of severe upper abdominal pain which he calls indigestion but which he describes as being very severe and cramplike in character, lasting several days at a time and leaving his abdomen very tender. Has vomited very little with these attacks.

Examination on admission. Temp. 99.5, pulse 88, respiration 20. Pallor is very marked; shows loss of weight; is worried and anxious about himself. Pulse thin and low volume. First sound of heart is indistinct with systolic murmur thought to be hemic in origin. Abdomen shows some general tenderness with slight resistance of upper recti. Blood on admission showed Hb 25 per cent, R. B. C. 2,136,000, W. B. C. 6500. X-ray studies showed what was thought to be either ulcer or cancer midway of the greater curvature of stomach. This was checked up under atropine and decided to be ulcer.

Provisional diagnosis of ulcer of stomach was made and patient placed on medical treatment. Was given blood transfusion the day of admission and that night got up to go to the toilet and bled profusely from the bowel and almost fainted. During the next four weeks was given five transfusions and improved considerably: at the end of this time his blood showed Hb 65 per cent, R. B. C. 3,042,000. He now began to have cramps in the upper abdomen, and, what was very

striking, numerous peristaltic waves across the upper abdomen above the umbilicus whose direction was from right to left and not from left to right as is seen in pyloric stenosis. So severe were these attacks that the patient consented to operation which he had refused up to this time.

Operation Drs. Pressly and Kennedy, Sept. 11, 1922. Upper left rectus incision. Stomach was a little large with no adhesions and no evidence of ulcer. Duodenum was pulled high up by adhesions to gall bladder, which with the presence of a localized area of hepatitis over the gall bladder was taken as evidence of past cholecystitis. Adhesions freed between gall bladder and duodenum. Appendix, caecum, sigmoid and rectum felt normal. The stomach was opened and the finger passed down into the duodenum but no evidence of ulcer or cause for bleeding could be found. Opening in the stomach closed, and abdomen closed as we did not feel like exploring further on account of patient's condition although we were disappointed at not finding the cause of the hemorrhage.

Following operation the patient vomited off and on but was in pretty good shape until the sixth day when he bled profusely during the night, his pulse went up to 160 and the next morning he passed a large stool of dark blood. In the next twelve days he was given three more transfusions, but

he continued to bleed from the bowel, to have upper abdominal pain and to vomit. A mass was now at times palpable in the upper abdomen and a little to the left of the midline. At times this mass could not be felt but when felt was very soft and not especially tender. After a few days this mass moved more to the left and downward and could be felt very distinctly. Thinking it an obstruction from a tumor it was decided to explore this mass, which was done under novocaine.



Fig. 2. Case 1. Photomicrograph of Lipoma of Caecum.

Second operation Sept. 23, 12 days after first operation. The mass was found to be an intussusception of the jejunum extending from the ligament of Treitz downward to the left side of the pelvis involving the upper three feet of jejunum. The bowel was pulled apart with some difficulty finding a retrograde intussusception on top of a primary one. The center of the mass was a hard tumor the size of a lemon projecting into the lumen of the bowel. The involved jejunum was thickened, dilated and inflamed but the circulation was good. There was no glandular involvement. Six inches of the jejunum including the tumor was resected with the cautery and an end to end anastomosis done with a Murphy button. The tumor was attached to the bowel by a large pedicle, was quite firm with an irregular surface covered with mucosa in which were numerous ulcers half centimeter or more across the base.

Pathological report by Dr. H. P. Barret: "Tumor composed of long spindle-shaped cells closely packed with little intercellular substance. Some areas very vascular. Round cell and some polymorphonuclear cell infiltration throughout. A few mitotic figures seen. In the portion of the tumor

exposed in the lumen of the intestine several ulcerated areas are present with considerable exudate and some oedema. The tumor apparently arises from the muscle coat of the intestine. Diagnosis by Dr. F. B. Mallory: Leiomyosarcoma."

The patient did well for four days and began to vomit again and it was thought that the intussusception had recurred. Accordingly, on Sept. 28th, five days after his second operation, he was opened up through his last incision under gas-ether. A low grade peritonitis was present with distention of the bowel. A very interesting observation was that the jejunum at the site of resection was perfectly healed and the site could be identified only by a small raw area in the mesentery, although this was but five days after the resection. An enterostomy was done in the ileum and the abdomen closed.



Fig. 3. Case 2. Leiomyosarcoma of Jejunum. Profuse hemorrhages took place from the ulcers in the mucosa covering this tumor.

During the following four days he was decidedly improved, then began to have vomiting and abdominal cramps. Patient dragged along fifteen days with obstructive symptoms persisting. The abdomen was opened again as a last resort. Several localized abscesses were found in between the loops of jejunum in the upper left abdomen and such dense adhesions as to cause obstruction in the area originally involved. This was shortcircuited with Murphy button connecting loops of jejunum above and below the obstruction. He showed no improvement following this procedure and died two days later of peritonitis with obstruction.

To summarize the case, he had four operations and nine transfusions while under treatment. His operations were: gastro-

tomy and separation adhesions pylorus to gall bladder; resection jejunum; enterostomy; and enteroenterostomy. This case was very interesting from the standpoint of diagnosis. The peristaltic waves across the upper abdomen from right to left should have been a warning that the obstruction was not in the stomach; the vomiting of bile which developed before operation should have indicated the obstruction was below the first portion of the duodenum. This case shows that a patient does not necessarily have an ulcer of the stomach just because he vomits blood, passes it by bowel and has X-ray pictures suggestive of it. Even after opening the abdomen we were so sure the trouble was in the stomach we wasted valuable time opening the stomach which might better have been employed exploring the bowel. The peritonitis following the second operation was, I fear, due to soiling of the peritoneum at the time of resection, although we had a partial alibi in that the peritoneal covering of the intestine was somewhat damaged by the intussusception and the low resistance of the patient due to loss of blood over a four months period.

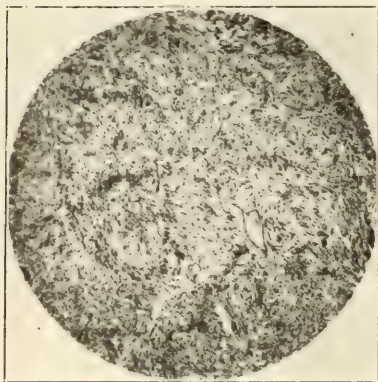


Fig. 4. Case 2. Low power of sections of tumor shown in Fig. 3.

Incidence. In children the question of tumor as a causative factor in intussusception does not enter until the age of seven or eight years has been reached whereas in adults a very large percentage of intussusception is caused by tumors. Statistics for tumor as a cause of intussusception range all the way from 20 per cent to 60 per cent in adults. Only .5 per cent of all tumors occur in the intestinal tract and

of these only 2.4 per cent are benign. In reviewing the literature relative to the occurrence of intestinal tumors one is struck with the wide variation given, and this applies especially to the benign type. Post mortem statistics show a

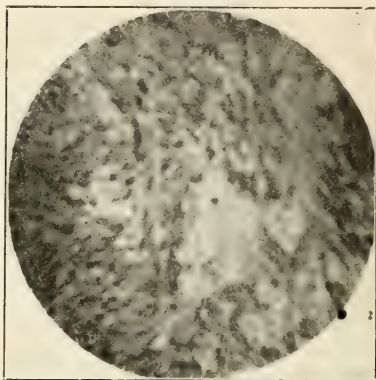


Fig. 5. Case 2. High power of sections of tumor shown in Fig. 3.

greater incidence of benign tumors than operative records show. For example, out of 25,000 operations in the Boston City Hospital adenomata of the intestine were found in only one patient, whereas they were found in four cases out of 4,165 autopsies. Here we have an incidence of one in 25,000 operations and one in 1,000 autopsies. This discrepancy may be partly explained by the fact that benign tumors often give no symptoms over long periods of years and partly, Willis thinks, by the added fact that some are overlooked at operation even though they may be the cause of intussusception, due to swelling of the bowel and sloughing of some pedunculated tumors due to interference with the blood supply. Willis is firmly convinced that this condition is caused by tumors much more frequently than is generally reported.

Situation. Tumor intussusception is more frequent in the small intestine than in the large due to the greater freedom of movement and the absence of longitudinal bands, and this in spite of a somewhat greater incidence of tumors in the large bowel.

Pathology. Tumors giving rise to intussusception are usually of the benign type due to the fact that malignant tumors are more rapidly growing and invade the bowel wall giving a brawny condition stiffening the wall, give rise to more inflammatory changes with adhesions, and are more often sessile than pedunculated. Out of 284 cases of tumor intussusception studied by Kase-meyer 85 were malignant and 192 benign. Of the benign tumors the pedunculated are more frequently the cause of an intussusception.

Method of Causation. Several theories have been advanced to explain the formation of intussusception and its formation is more definitely understood where there is tumor than where there is no demonstrable lesion. Whatever initiates the infolding it is plain enough that the tumor mass may be caught in the powerful contractions of the intestine as in a vice and as it is pushed along its base exerts a pull on its attachment to the bowel wall, and so the intussusception continues. With the type of intussusception occurring in infants and children we are not concerned in this paper but I do want to call to your attention that the theory has recently been advanced that primary intussusception in children is due to a swelling of preexisting lymphoid tissue, which is equivalent in its action to a tumor; both are foreign bodies in the intestine. After the obstruction becomes complete the peristaltic waves may be reversed and a second retrograde intussusception begins to form, as in the second case reported where the retrograde intussusception was stopped only by the ligament of Treitz. This is rendered more easy as the bowel above the obstruction hypertrophies in an effort to relieve the obstruction. Power states that 5 per cent of all intussusception are of the retrograde type, and it usually forms secondary to an obstruction or as a terminal event in peritonitis. In only one instance did I find a primary retrograde intussusception reported in the literature and that was in the Sigmoid associated with a malignant pedunculated papilloma.

Symptoms. The symptoms may be described as occurring in two stages: the first stage characterized by severe attacks of abdominal colic accompanied by vomiting and perhaps blood and mucus in the stool; in the second stage the symptoms are those of intestinal obstruction, e. g., toxæmia, abdominal cramps and distention with vomiting. The vomiting now is continuous and soon amounts to spitting out of the side of the mouth contents of the upper intestinal tract. The history of periodic attacks of abdominal cramps and vomiting in the past is explained by recurring mild intussusception which has reduced itself. A mass may be felt at times, but the absence of a palpable mass may be confusing if it is under the liver edge or behind a distended loop of bowel. Constipation is a marked symptom, as in the first case reported.

Diagnosis. The diagnosis of this condition is seldom made positively before operation and most cases come to operation only after definite obstructive symptoms appear. In those with the history of recurrent attacks of abdominal cramps accompanied by vomiting, with little or no fever and little abdominal tenderness, with no symptoms between attacks, this condition should be kept in mind. The added presence of an abdominal mass is still more suggestive. X-ray studies will show the site of obstruction if such exists, but between attacks may be negative.

Treatment. The treatment of tumor intussusception is entirely surgical and since most cases come to operation with definite obstructive symptoms it resolves itself into treatment of that obstruction. If the intussusception may be reduced and the circulation of the intestine is good the tumor may be excised and the intestine sutured. Most cases however require a resection of that part of the intestine containing the tumor. If the tumor is left the intussusception will recur. In cases with complete obstruction requiring resection it may be the better surgical judgment to do a two or three stage operation, merely relieving the obstruction with enterostomy or colostomy at the first operation. In those cases

with considerable enlargement of the intestine in which recurrence is feared the intestine may be plicated to reduce the size and so prevent recurrence.

505 Professional Building.

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ILEO-CECAL INTUSSUSCEPTION IN AN ADULT DUE TO INTESTINAL TUMOR.—REPORT OF CASE.*

By J. D. Highsmith, M.D., Fayetteville, N. C.

The rather uncommon occurrence of intestinal invagination caused by tumors influences me to report this case of intussusception due to an Adenomatous Polyp in a middle-aged Negro man.

Case No. 13,346—S. A. Negro male, age 42. Married; comes to Hospital suffering from cramp-like abdominal pain. Referred to us for Appendectomy.

F. H. Negative.

Patient denies venereal diseases. Two years ago was shot in right side of abdomen with bird shot, some of shot penetrating through abdominal wall he thinks. Has had typhoid fever and small pox. Other than that general health has been good.

The symptoms first noticed were in June, 1921, when he had an attack of cramping pain in the region of the umbilicus accompanied by nausea and vomiting, the attack of severe pain lasted several hours and gradually subsided. For two weeks had abdominal tenderness and occasional cramps and diarrhea. Did not have another attack

until January of this year and during this interval says he was not constipated and felt good. Since January has lost considerable weight and suffers from general malaise, but has been free of pain. One week ago was again taken with cramp-like pains of the most severe character through entire abdomen. The pains start slightly to the right of the umbilicus and radiate in all directions and are of a bearing down character. Bowels have moved freely; there is some increased frequency of urination and dysuria. Patient thinks he has appendicitis. Has taken only liquid food since onset of attack.

Examination. Patient is a well developed and nourished Negro male adult, age 42 years. Temperature 100. Pulse 84. Respiration 20. Heart and lungs negative.

In the right hypochondriac and iliac regions a soft, smooth, kidney-shaped mass can be felt. This mass is freely movable in all directions. The mass is about six inches long and four inches in thickness.

Fluoroscope examination following Barium Meal. Small intestines slightly delayed in emptying. Meal was out in 24 hours. In view of this fact patient was cystoscoped and pyelogram made. The right kidney was shown to be in its normal position.

Operation. Right rectus incision made and abdomen opened. In the right iliac fossa there was found a tumor mass which being delivered from the abdomen proved to be an intussusception of the ileum into the cecum for about six inches without obstruction. The invagination could not be reduced. The intussuscepted mass which included the cecum, appendix, and six inches of the ileum was resected and an end to end anastomosis performed.

Examination of the resected intestine showed a tumor about one inch long and an inch in thickness hanging by a pedicle in the lower portion of the ileum about two inches above the ileocecal valve.

Pathological examination proved it to be an Adenomatous Polyp. The etiology of intestinal polyps is uncertain, they may occur at any point along the gastro-intestinal tract, but in the majority of cases they are found in the large intestines and rectum. Sometimes they are found at autopsy in persons dying from other conditions.

Intussusception subsequent to intestinal growths according to most observers is caused by the violent peristalsis which the presence of the tumor excites. Other observers contend that the intussusception in such cases is caused by the mere weight and pulling of the tumor on the intestinal wall as it is being pushed forward by the intesti-

*Read before Fifth District Medical Society, Sanatorium, N. C., July, 1922.

nal peristalsis and the stream of intestinal contents. If the last theory were true the tumor would always occupy the apex of the intussusception but this is not always the case.

THE STUDY OF SYMPTOMS IN THE DIAGNOSIS OF THE MORE COMMON LESIONS OF THE RIGHT ABDOMEN.

By Jas. W. Gibbon, M.D., Charlotte, N. C.

The diagnosis of disease conditions is the real problem of the practice of medicine. Treatment in most instances has been standardized, and follows along more or less fixed lines. Diagnosis will always present difficulties, and can never become solidified within any certain confines. The same disease may masquerade in so many different forms, the same disease may vary to such an extent in different individuals, that diagnosis must always be a changing and ever-broadening art. Diagnostic ability is attained as a rule only after wide experience and close observation and careful recording. The unusual must be thought of as well as the usual. Each case presents an individual problem in which one must concentrate all of his knowledge and experience, and every feature must be weighed, and analyzed and balanced as a whole and one with another. Many of the tragedies that one sees or hears of in surgery and medicine are of two sources. First, the diagnosis is too late, and the disease is too far advanced for any form of treatment to hold out any hope for cure. Early diagnosis is the first and most important factor in every physician's practice, whatever his specialty be. It is a very reliable adage which remarks, "the easier the diagnosis the worse the prognosis." When symptoms and signs are so obvious, and the recognition of the diseased condition requires only a little effort on the part of the physician, one may be certain that the disease is far advanced with extensive pathological changes already present. Second, the tragedies of medicine and surgery come

as result of mistaken diagnosis, that is faulty diagnosis. The patient is treated for one thing when actually he is suffering from something entirely different, or he is operated on for appendicitis when the actual lesion is a carcinoma of the intestine.

In this day of specialized diagnosis, when there are so many resources, and physical aids, for arriving at a diagnosis, I think one method of diagnosis is too often lost sight of. One is too occupied with the X-ray studies, blood chemistry, and other highly technical methods to get down to "fundamentals," as McCrae would have it, and analyze the simple story of the case or the development of the symptoms. Too frequently again we rely on the X-ray to make the diagnosis and too often we allow our powers of observation and investigation to wane when in a given case a positive diagnosis is rendered by someone of the customary technical methods. This is undoubtedly a mistake. There is still at this day much to learn from the study of symptoms alone. Particularly is this true in the diseases of the abdomen where physical signs are found lacking in so many of the more common lesions. A study and familiarization with the symptoms of abdominal diseases is necessary before one is to attain that finer knowledge of the relative value of symptoms which forms the foundation for a correct diagnosis. Diagnosis based on the relative analysis of symptoms will invariably prove one's surest guide to an accurate diagnosis. The most distinguished diagnosticians of the day are men who invariably go to the history of the case for their foundation in diagnosis. Among the surgeons no less teacher and astute diagnostician than the late John B. Murphy frequently remarked in his clinics that 80 per cent of a diagnosis is to be found in the history.

The relative value which may be given to the history of the symptoms very naturally depends on the degree of skill which the physician who takes the history may have. Two different men will often take a very different history of the same case. The interviewing of a patient in regard to his symptoms really

amounts to a "cross-examination" in many respects similar to that of a lawyer. One's skill in history-taking, of course, to considerable extent depends on his experience, but to become adept in this art one must first practice the three great qualities enumerated by McCrae, "Patience, Thoroughness and System." It is the cultivation of these things in one man which makes him a better versed diagnostician than an equally intelligent associate. "The art of diagnosis represents the solving of a problem, and this should always be of interest. What seems the most simple case may contain unsuspected difficulties, and the good rule of distrusting the obvious should always be before us."—(McCrae).

Appendicitis.

The commonest, and as a rule most easily diagnosticated disease in the abdomen, is appendicitis. Yet how very, very often are other conditions in the abdomen confused with it, and with such unhappy results. Appendicitis occurs in acute attacks, and these attacks may be mild, almost unnoticeable, or severe and disabling, and in either case is always a recurrent disease, coming on at intervals over a long or a short time. I purposely avoid the use of the term "chronic appendicitis" because it leads to confusion and is a diagnosis that I think is growing less and less popular. The history and development of appendicitis, be it mild or severe, is often very typical. The symptoms manifest an orderly sequence, and the same relative prominence. The onset is always with pain. Pain is the first symptom, and is soon followed by more or less nausea, and vomiting. The lesser symptoms are loss of appetite, fever, constipation, etc. Pain is not only the first symptom but is always the most prominent, and if any other symptom rises, and to any degree overshadows or equals the pain in prominence, it should be occasion for the first doubt in the diagnosis of appendicitis. The pain is often all the patient complains of, and vomiting is never marked, and it is never repeated oftener than three or four times at the most, except in children. The keystone

symptom then in appendicitis is pain, and in the study of this symptom alone much valuable information may be obtained.

The most absolutely characteristic quality of the pain in appendicitis is the pain which begins as a colic or cramping pain first in the epigastrium, or about the umbilicus, or throughout the abdomen, and after a few hours, localizes in the right iliac region. The pain in the right iliac region is sharp, intermittent and remittent. I know of no other disease in the abdomen which gives such a similar development of pain, and once a clear history of this is gotten one can be pretty well assured that the condition is appendicitis. Without such a history of pain, there is reason in the minds of many surgeons to doubt the diagnosis.

There is another interesting type of case, in which the pain at the onset is located in the upper abdomen, and never localizes in the right side at all. These cases are often diagnosed ulcer of the stomach or duodenum, gall stones, etc., and are chiefly characterized by high abdominal colics. Finally after a number of these upper abdominal attacks, an attack occurs which begins high just as in all of the former instances, but this time, after a few hours localizes in the right iliac region, and gives both the patient and the physician the clue to the diseased organ. In other cases, the pain remains high and never shifts to the right iliac region, but all of the tenderness, and residual soreness develops at McBurney's Point.

The pain in cases of mild, or what may be called Subacute Appendicitis is more vague and the diagnosis is more difficult because in these cases the disease is early and the symptoms and the physical signs are not marked. But there is a more or less characteristic history of pain even in these cases. The pain in these cases occurs at intervals. After a period of freedom from symptoms, there develops in the right lower abdomen a sense of soreness, a sort of dull ache, aggravated by walking, etc. It may come on at any time every day for several days, vary in intensity from day

to day, and then pass off, only to recur again in a short while. At times there are numerous small, shooting sharp pains, each lasting scarcely a minute, felt in the side and then are gone. Associated with the pain there is a residual soreness, unassociated with the menses and with no reference to the back. A history of this sort I believe is due to an early inflammation of the appendix. There is not the severe suffering of the frank acute attack, and the patient is never disabled, but it is very annoying and many patients seek relief from it. My belief in the virtue of this history of pain is based on operated cases of acute appendicitis in which these symptoms were given in the very earliest part of the history, and also upon operated cases presenting this history alone in which distinctly diseased appendices were found.

Hemorrhage from the stomach is an unusual symptom of appendicitis. There are however cases of such on record and numbers of surgeons of large experience have noted it. It is through the action of the liver that the hemorrhage from the stomach is brought about, toxins reaching the liver from the diseased appendix by the portal circulation.

Referred symptoms in the stomach are quite frequent in disease of the appendix, a fact which is well known to all. A chronic, or persistent disease in the appendix manifested by recurring attacks of mild or severe abdominal pain ultimately is very prone to set up a chain of functional symptoms in the stomach. At operation Moynihan has shown these to be represented by a contraction of the pylorus, and a curious pyloric "blush." The symptoms in the stomach are chiefly those of a flatulent or acid dyspepsia, although ulcer or gall bladder disease may be mimicked. To make a diagnosis of appendicitis based only on a conglomerate lot of gastric symptoms, and constipation is to hazard a very great risk of an erroneous diagnosis. Pain is the first and always the most important symptom of appendicitis, and it seems questionable whether a diagnosis of appendicitis can be made without pain as a symptom. The

pain is not necessarily over the appendix but most commonly is present in one of three places, either in the epigastrium, where it may suggest gall bladder disease or ulcer of the stomach,—or about the umbilicus,—or in the right iliac region. It has been shown that the most numerous cases of appendectomy with unrelieved symptoms, are those cases in which pain has not been enumerated as a pre-operative symptom.

The pain in acute appendicitis scarcely ever reaches the extreme severity of the agony of a hepatic colic, or a perforated ulcer. It never extends into the back, into the thorax, or to the shoulder blades. In gall bladder disease nausea and vomiting may be extreme, very rarely is this true in appendicitis. The differential diagnosis between appendicitis and ulcer of the stomach may at times be impossible, but a clear understanding of the history of the two conditions will be of aid.

Gall Bladder.

Symptomatically disease of the biliary system may be divided into four groups as suggested by Jacobson. In the first group, the "typical biliary colic group," there are periodic attacks of severe pain in the upper right abdomen or epigastrium. The onset of the pain is sudden, often without warning, or at times it begins as a nagging pain which rapidly develops into a most intense one. The suffering of a patient with hepatic colic is fearful. He will often walk the floor, or is forever changing the position of the body in his ceaseless unrest and search for some position which may alleviate the agony of the pain. Suddenly the pain may cease, and the patient except for some soreness will feel quite as well as before the attack. The pain usually radiates around the right costal margin, into the back, to the shoulders, neck or arm. It frequently extends into the thorax in front, and around the cardiac region. This radiation of the pain in cases which have a hypertension, some arterial thickening, and an enlarged heart may very strikingly suggest angina pectoris. Also it is to be remembered that disease of the heart and coronary arteries it-

self will often give rise to acute pains in the epigastrium. It is characteristic of these attacks to come on at night in many instances. Flatulence is usually present, the patients often remarking that "the gas rolls out of the mouth." Nausea and vomiting are also often present. Either may become extreme. The onset of the symptoms of the disease may be with this severe, agonizing colic, but there are also cases in which there is a very much more gradual development. The attacks of pain in these early cases may not be severe, may last only thirty minutes to one hour, will not be more than the patient can bear, and often the patient will find some remedial measure. Vomiting gives some patients relief, hot water bottles to the abdomen, a dose of salts, etc., to others. In the cases of fully developed colic, the pain is more than the patient can bear, and must be relieved by a hypodermic of morphine. A varying grade of jaundice following an attack indicates the diagnosis without much doubt. In this group there are no symptoms other than these recurring attacks of pain, and between the attacks the patients are perfectly well..

The second group has been classified as the "typical biliary group." These patients have no attacks of acute biliary colic, there is no typical radiation of the pain. The patients complain of a dull, aching pain in the right upper abdomen, irrespective of food, and without serious impairment of the health. This pain may be constant or continuous, though in the majority of the cases there are periods of remission. Chills, fever, nausea, and vomiting may accompany the attacks. Jaundice is an inconstant feature.

In the third group of gall bladder cases there is no history of pain, and nothing to indicate that the gall bladder itself is the cause of the symptoms. The symptoms are known as "gall bladder dyspepsia" and are referred almost entirely to the stomach so that the patient invariably thinks there is disease of the stomach.

The symptoms which patient with "gall bladder dyspepsia" complains of

are flatulence, a feeling of fullness in the epigastrium after meals, even though little has been eaten, symptoms of so-called "sour stomach," bitter eructations, heart-burn, etc. The appetite is not altered, the bowels are usually constipated, the patient is well nourished often robust. Headaches are not uncommon, and very often the patient states that she has no energy, feels dull and heavy. The complexion is not good. These symptoms may be the only indication of gall bladder disease, and very frequently in our histories they have preceded the attacks of definite gall bladder crisis by many years, during which the patient was treated for and thought to have chronic stomach trouble. These are the cases which need the most careful study in order to reach the correct diagnosis. In some cases the symptoms of peptic ulcer may be very closely simulated. In gall bladder dyspepsia however the symptoms rarely assume the regularity, and clear-cut nature of those of peptic ulcer. Hemorrhage from the stomach may occur in gall bladder disease. Recently cases of this character have been reported by Judd.

The fourth group of gall bladder cases combines the symptoms in the first and third group. It is called the "biliary-gastric-group." In such cases the patient suffers periodic attacks of colic, and during the interval between these is troubled by a persistent, flatulent dyspepsia or indigestion.

Ulcer of Stomach and Duodenum.

In consideration of the symptomatology of ulcer of the stomach and duodenum, it is rather the common rule that whatever holds good for duodenal ulcers holds equally good for all ulcers situated in the pyloric end of the stomach. Therefore, since this is true and the majority of all ulcers are in the region of the pyloric sphincter, the duodenal ulcer may be taken as the type in discussing the symptoms.

The clinical features of ulcer of the duodenum have been very completely discussed and clarified by the observations of Moynihan, the English surgeon, Deaver, Graham, Eustermann and the

Mayo's in America. The symptom-complex of ulcer has been found to manifest four characteristic features of great diagnostic significance in the majority of the cases.

First, the periodicity of attacks is so constant and striking a feature of ulcer of the stomach and duodenum that one cannot but have in mind this lesion when the patient complains of repeated attacks, each covering days, with an intermission of normal health of a varying time. The onset of the symptoms is often initiated without discoverable cause, appearing suddenly and continuing without interruption for days, weeks, or even months, each day a repetition of the former, each meal producing about the same effect; first, ease—later followed by the usual syndrome of pain, or burning distress, gas, sour eructations, and vomiting of sour mouthfuls of varying quantities, all of these being at their worst from two to five hours after a meal.

The second feature of ulcer symptomatology is the chronicity. The history of the symptoms in these cases covers a period of many years—not infrequently as many as twenty years. The conclusion must be drawn that the condition first begins in youth but the symptoms do not become serious in most cases until many years later. We have operated on cases of ulcer of the stomach as young as twenty-four years and as old as sixty-two years. During all of these years there are periods when the patient suffers from the symptoms regularly every day. Suddenly all symptoms disappear, and a period of normal health is enjoyed. Such occurrences are rarely seen in gall bladder or appendiceal dyspepsia. Reflex stomach symptoms from disease in these organs is more commonly continuous, without such clear-cut periods of remission, although the chronicity may be as evident as in ulcer of the stomach.

Pain is the one great and most constant symptom in gastric ulcer, is perhaps the most characteristic and diagnostic in its manifestations. As has been well said "it is not the kind of pain, nor the location of the pain, but

the time of the pain that is the distinguishing feature." It is the regular, almost clock-like appearance of this pain at the same time every day during an attack that attaches to it such definite diagnostic significance. There is perhaps no other abdominal condition which has so peculiar a way of manifesting its presence. The pain varies from a mild distress to that of great intensity. It is felt in the epigastrium, or right upper abdomen, and is described as a "burning," a "gnawing" or a "boring" sensation. Unless complications have introduced considerable modifications, its appearance, control, and disappearance, are almost if not quite the final evidence required for a correct diagnosis. Patients can often give definite hours for the appearance of the distress, or pain. Usually eleven in the morning, four in the afternoon, and two at night. Always however, the pain appears sometime after meals, oftener it is nearly exact to say before meals. Usually it is from two to five hours after meal that the burning, gnawing feeling begins.

The last remarkable feature of the symptoms of stomach ulcer is the readiness with which these are controlled during an attack, in uncomplicated cases. These methods of control seem to come to the patient's attention at a very early date. Food control is absolute. A cracker, a biscuit, a glass of milk gives instant relief. Another meal gives relief until the stomach begins to empty. One patient carried crackers in his pocket during his golf in the afternoon to be eaten about four o'clock when the pain began. Another, an aviator, always carried crackers to be eaten during the flight for relief. Alkalies give many patients relief, especially when combined with a little food. Others force vomiting to rid the stomach of the bitter sour material which seems to collect and cause the pain. (This, however, is infrequent.)

Hemorrhage from the stomach occurs in twenty-five per cent of the cases of ulcer. Ulcer is the most common cause of hemorrhage from the stomach. The

blood may be immediately vomited or may pass largely in the stools. Blood in the gastric contents in small amounts, is more indicative of gastric cancer than ulcer.

In uncomplicated ulcers of the stomach and duodenum, vomiting is almost unknown as a symptom. Moynihan states that the majority of the patients on whom he has operated have never vomited. It is often induced to relieve symptoms.

Throughout the period of symptoms the appetite remains good, however certain foods principally fruits and acids of all sorts cannot be tolerated. There is rarely nausea, the weight remains about the same, but the bowels usually manifest a chronic spastic constipation.

Such is the history of uncomplicated ulcers of the stomach. It is in the late cases when such complications as adhesions, hourglass contractions, obstruction of the pylorus and chronic perforation have occurred that the true picture of ulcer may be obscured. It is in these however that a carefully taken history is of such value.

Complications of Peptic Ulcer. Contractions and obstruction to the pylorus cause marked vomiting from stagnation of the food, nausea, loss of appetite and loss of strength and weight, with intensification of the pain in the upper right abdomen which is not relieved by food, alkalies, etc. These cases often present the picture of an advanced carcinoma of the stomach, and possibly cannot be differentiated from ulcer except at operation. It has recently been brought to our attention that a spasm of the pylorus set up by an ulcer may be so intense as to cause obstruction with stagnation of food and constant vomiting, simulating real organic obstruction.

Chronic and incomplete perforations may be the cause of recurrent attacks of acute pain in the upper right abdomen. These attacks may suggest acute gall bladder attacks, or acute appendicitis. It is the spread of the infection through the thinned out wall of the stomach to the peritoneum with a resulting localized peritonitis which is the pathological foundation for these

attacks. When the spread of the infection is slow enough to permit the formation of protective adhesions in advance of the actual perforation, quite an extensive mass may be gradually produced with a secondary cavity, or a perigastric abscess may be formed with localization of the peritonitis. In other cases the process may be more acute, and the localized peritonitis be severe enough to indicate an acute abdominal emergency with severe pain in the upper right abdomen. At operation these latter cases will show yellow fibrinous exudate scattered over the peritoneum about the ulcer crater, numerous omental adhesions, and an ulcer whose base is so thinned out as to threaten immediate actual perforation.

In conclusion, appendicitis, gall bladder disease, and ulcer of the stomach are largely responsible for not only symptoms in the right side of the abdomen, but also for the majority of the cases which live through various periods of suffering from chronic indigestion, dyspepsias, sour stomach, etc. Each of these can be differentiated in the chronic stage to some degree of accuracy by a careful study and analysis of the symptoms, but during an acute attack, unless there is time for a detailed previous history, cannot always be differentiated. A greater familiarity with, and co-ordination of the symptoms will unquestionably fit one for finer and more accurate diagnosis even when in the presence of an acute condition demanding immediate action.

THROMBO ANGIITIS OBLITERANS.

By Harold Glascock, M.D.

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Thrombo-angiitis obliterans is apparently a very rare disease, especially in this country. As far as I can discover there has only been one case of the disease found in this country in a native Gentile. The two following cases carry exceptional interest because they are

both gentiles and both born and reared in North Carolina. While there is no microscopic pathological report of these cases, the symptoms are so typical, that practically no doubt as to the correctness of the diagnosis can be entertained.

Buerger of New York has reported a series of two hundred of these cases and I shall quote from his writings in "Surgical Diagnosis and Treatment," by Ochsner, page 787, where he sets out very clearly the clinical symptoms and characteristics.

"Thrombo-angiitis obliterans is a clinical and pathological entity which has been, and is still, incorrectly called "endarteritis obliterans" by many authors. The names, presenile, infantile and juvenile gangrene have also been applied to it.

"At the onset, thrombo-angiitis obliterans is essentially an inflammatory process, involving particularly the deeply situated and larger arteries and veins of the lower or upper extremities. Almost immediately after the inception of the lesion, there follows extensive occlusive thrombosis, that subsequently gives way to a stage of healing or organization, the final result being the complete closure of arteries and veins over a large extent of their course by vascularized and canalized connective tissue. Although no extensive study has been made of thrombo-angiitis in the vascular domain outside of the extremities, the typical lesions have been observed by Buerger in the spermatic vessels, and according to Murphy, are said to occur in the renal vessels.

"Characteristic is the involvement of the superficial veins of the lower and upper extremities in the form of a migrating or thrombo-phlebitis in about 20 to 25 per cent of the cases. It is in this territory that the most thorough and reliable investigations on pathology can be made, as the lesions in the vessels then become accessible at the very onset of the malady before the effects of organization and healing have confused the histological picture.

"Clinical Symptoms—The disease manifests itself in most instance with

indefinite pains in the sole of one foot (usually the left) in the ankle, or in the toes, the patients being soon disturbed in their walk by these symptoms, or by the sudden onset of cramp-like sensations in the calf or elsewhere in the leg (intermittent claudication). These feelings make the patients take frequent rests, often inducing them to investigate the condition of their limbs. Some take off their shoes and rub the part in the hope of dispelling the pains or banishing the uncomfortable numbness of the toes and feet; others say that the feet become cold and numb when the temperature is low and the weather is inclement. After the lapse of weeks, months or even years, evidences of trophic disturbances make their appearance. Following the cutting of a nail, or without apparent cause, an abraded spot or hemorrhagic bleb, a pustule, or a dry, dead patch of skin develops near the tip of one of the toes or under a nail. Now the local pain becomes excruciating during the night as well as day, so that some of the sufferers beg for amputation of the affected part.

"It is usually during the first attack of trophic disorder, but sometimes when only intermittent claudication is present, that the physician or patient notices another characteristic symptom, namely, a peculiar blush of the toes and forepart of the foot, sometimes extending to the ankle or slightly above, when the limb is in a pendant position (Plate V). Upon allowing the limb to hang down, the affected toe soon turns color. It assumes a bright red hue which is seen to pass to the other toes and then up the back of the foot for a variable distance. This reddening is often termed rubor, or may be called erythromelia. The elevated extremity, on the contrary, rapidly becomes blanched (ischemia). Sometimes the superficial ulcer will heal under conservative treatment and the patient will either recover perfectly or his symptoms will become chronic. At this period his limb will show the scars left by previous ulcers. The dorsalis pedis and the posterior tibial arteries usually fail to pulsate, and ischemia in the elevated position and redness or

"erythromelia" in the pendant position are regularly elicited. Sooner or later, however, a patch of gangrene develops, the local pain becomes intense, and amputation will be the issue.

"Because of the striking condition of redness in the dependent position, and because of the increase of local pain when the limb is hanging down, a number of clinicians have been accustomed to diagnosticate "erythromelalgia" in these patients. Some cases have been regarded as examples of Raynaud's disease, because in them the symptoms of blanching and cyanosis of the parts were prominent features. Although resembling erythromelalgia and Raynaud's disease in a number of symptoms, the clinical picture of thrombo-angiitis obliterans is so characteristic and definite, and its pathological lesions so typical in this disease, that it constitutes a distinct clinical entity.

Clinical Characteristics.—In a study of 200 cases by Buerger there was one in which the typical picture of thrombo-angiitis occurred in a Gentile. In 100 cases there were 76 Russians, 17 Austrians, 3 Americans (of foreign extraction), 2 Roumanians, 1 German, 1 Turkish (of Russian extraction) Hebrew. Of 100 cases there were 99 males, 1 female.

"Most of the cases were heavy smokers, the average amount being almost 21 cigarettes daily. Two cases (1 male and 1 female) asserted that they had never smoked."

Case 1.

Mr. L. A. C., age 32, occupation cotton mill worker, married fourteen years. One living child. Father died of typhoid fever. Mother died of tuberculosis and one brother died of tuberculosis. Family history otherwise negative. Gives a previous history of alcoholism. Smokes about twenty to twenty-five cigarettes daily. Blood and urine negative. Temperature 99 3-5, respiration 23, pulse 108. Wassermann negative.

Present illness began February 1921, with an ingrowing toe nail. The ingrowing nail did not improve after three months, and his physician removed a portion of the nail the latter part of

April, 1921. Three weeks later there being no improvement the whole nail was removed. July 15, 1921, the toe not showing any tendency to heal, the first phalanx was removed, and on September 17, 1921, the patient presented himself at the Mary Elizabeth Hospital with a reddened and swollen foot as far as the ankle, and stated that the foot was very painful and that at times he could not walk, and upon elevation of the foot, the pain was much more severe than when hanging down. He complained of cold feet and that any additional cover or warmth made the pain much worse. The bone of the toe could be seen extending beyond the flesh and there was marked gangrene of the toe half way to the metacarpo-phalangeal joint. Slight emaciation. Physical examination otherwise negative.



On September 19th, 1921, the big toe was amputated at the metacarpo-phalangeal joint. After operation the gangrene kept gradually extending upward, and on October 14, 1921, the foot was again operated, and the metacarpal bone of the big toe was amputated one half inch back of the metacarpo-phalangeal joint, and the tissues removed to healthy tissue. The patient improved very slowly, but was discharged from the hospital October 30, 1921, but was

not discharged from care until December 15, 1921, and at this time the wound had not completely healed. The case was not seen any more until January 23, 1923, practically one year later, when he again entered the hospital. At this time he was suffering intensely with pain and had been unable for about four months to walk, or work. On elevating the foot he would cry out with pain. Complained of the foot being cold, and would not let it stay under cover, but insisted upon letting the foot rest on a chair by the side of the bed. At this time there was gangrene of all of the toes except the little toe and the foot was swollen and fiery red as far as the ankle. Upon further examination it was found that he had no pulse in either the dorsalis pedis or posterior tibial of either foot. There was also an absence of pulse in both of the popliteal arteries and the pulse in the right radial was markedly less palpable than that in the left. He was also having slight pain in the left foot at this time. His physical examination was otherwise negative. A diagnosis of Thrombo-angiitis obliterans was made at this time and the right foot amputated four inches above the ankle joint, no tourniquet was used and there was very little hemorrhage. No spurt-ing. The wound has healed very slowly, and at this date, June 5, 1923, four months after operation, the amputation wound has completely healed and the patient looks much better and is practically free from pain. The pulse in his right radial is now absent, showing the condition is still progressing, and that it is a question at this early date whether the wound will remain healed and if he will have to have further amputations.

Case 2.

Mr. L. W. B., age 29, single. Patient is one of seven living children. Father, age 73 years, and in good health. Mother, and mother's sister died of apoplexy.

Exam.: Fluoroscopic examination of the lungs was negative, but the heart shows a slight enlargement of the left ventricle. The urine is negative, the W. B. C. count was 13,000, the Wassermann negative. Temperature 97, and pulse 70.

Patient is native born, and was reared on a farm in North Carolina. From the farm he went to the cotton mills to work. From there he went to a barber shop and when he had been working in the barber shop for 18 months his feet and hands began to swell and after two or three weeks he went back to his home on the farm, and recovered from what he thought was rheumatism. On recov-



ering he had several blisters over the body and one on the right ankle. These blisters appeared to heal up without any trouble, but in a few weeks an ulcer developed on his right foot, which refused to heal, or would heal and then break down, and ere long an ulcer developed on the dorsum of the left foot. In 1917 he had his first operation, an amputation of the right leg about three inches above the ankle. In 1918 the left leg was amputated at the middle of the middle third of the tibia. In 1919 he had a third amputation, taking the right leg off about four inches below the knee. The right stump refused to heal and presented an ulcer two inches in diameter over the stump. About three years ago he noticed that he was losing the pulse in each wrist and within a few months the pulse in each wrist had entirely disappeared. He has not had any

particular pain in the extremities since amputation and has not suffered from cold in particular, though he suffered great pain before the amputation. Otherwise he has enjoyed good health and at present is a robust young man, who gets about on his knees and takes care of himself.

Examination: Eyes—the left pupil is elliptical in shape, said to be the result of an injury, having been struck by a chip. The right pupil does not react to light. Eyes do not converge well. The nose is negative. All of the upper teeth are extracted and an upper plate is worn. Several of the lower teeth have been extracted and the others are in fair condition. The tonsils appear to be infected, two plus. There are no subtonsillar glands. The neck is negative. Thorax—the thorax is well formed and muscular. There is no adenopathy. Percussion and auscultation of thorax is negative. The heart shows evidence of slight enlargement but the sounds are normal. The apex beat is in the nipple line. Abdomen is negative. Genitalia is negative. The spine is negative. Lumbar areas are negative. Extremities—the right leg is amputated four inches below the knee, and there is an ulcer two inches in diameter at the end of the stump. The left is amputated at the middle of the middle third of the tibia. (Urinary history is negative with the exception of possible gravel symptoms several years ago but no return.) There is no radial pulse in either wrist. The pulse can not be palpated at the elbow and axilla in the right arm and the blood pressure in the right arm is 110/73. No pulse can be felt in either popliteal space. On February 2, 1923, a Gritti-Stokes amputation was done on the right leg. When the patient was discharged March 15, 1923, the wound had healed.

On June 15, 1923, this case reported that his wound had entirely healed, and that he had had a shoe made for the stump of the leg, and was walking about on it and experiencing no difficulty.

In the September, 1923, issue of *Surgery, Gynecology, and Obstetrics*, Rabbinowitz, Associate Surgeon of Beth

Moses Hospital, Brooklyn, in an article entitled "Experiments on the Infectious Origin of Thrombo-Angiitis Obliterans and the Isolation of a specific Organism from the Blood Stream," reports the finding of an organism with bipolar metachromatic granules in cases of thrombo-angiitis obliterans, which conforms to Koch's law. He has reproduced the disease in a series of experiments with rabbits and the pathology appears to conform in every particular to that of thrombo-angiitis obliterans.

THE INFLUENCE OF THE OLFACTORIES ON DIGESTION.

By George M. Niles, M.D., Atlanta, Ga.

The sense of smell is probably the least valued of the five senses, and the role it plays in many of the important bodily functions is least appreciated by the human race. Among the lower animals it is more essential, for by this sense they find and select their food, as well as detect the approach of danger. Some of the savage, or so-called wild people, have this faculty as highly developed as the lower animals, and Humboldt tells us of some Peruvian Indians who could follow the scent of game as well as hunting dogs.

These facts, though interesting, do not come within the scope of this article, and, in order to properly discuss the influence of the olfactories on digestion, we should study the subject from an anatomic, a physiologic, and a psychic standpoint. It may be well to remind the reader briefly that the area of the terminal expansion of the human olfactory nerve, the olfactory region, covers an area only about the size of a ten-cent piece, including only the upper part of the septum and the islands of the superior turbinate; detached islands are found in the vicinity of this chief olfactory region, but the remainder of the nasal cavity is fitted and used for respiratory purposes only.

There are certain essential differences between the olfactory and respiratory regions, the principal ones being as fol-

lows: The olfactory region possesses thicker mucous membrane, but it is covered with only one layer of cylindrical epithelium, and contains a yellow or brownish-red pigment, while the respiratory region has a double layer of ciliated epithelium mixed with some goblet cells. The main difference, however, lies in the presence of the end organs of the olfactory nerves and the olfactory cells which lie scattered between the long cylindrical epithelial cells of the surface; also the fine olfactory hairs are present, projecting through the pores of a delicate structureless limiting membrane, covering the surface of the epithelium. It will be noted that the area devoted to smell is situated as far as possible from the external nares.

The sensation of smell is elicited by the presence of odorous substances in a gaseous state, coming in direct contact with the olfactory cells or hairs. This generally occurs during inspiration, but odors received through the mouth, and then expelled through the nostrils, may be smelled, though not accurately.

The first moment of contact of the odorous substance with the olfactory organs seems to be the most effective, for they soon tire of a continuous odor, and may be absolutely insensible to it, while retaining their usual acuteness for a different one; for this reason it is best to sniff, or to take frequent short inhalations with the mouth closed. Some vaporous substances, especially those with pungent qualities, seem to act simultaneously on both the olfactory and gustatory senses, and Zwaardemaker describes some structures found in the olfactory region similar to taste buds. Nagel thinks, however, that this is only a stimulation of the gustatory nerves, on the posterior side of the uvula.

While a morsel of food is being masticated there is free communication with the nasopharynx, except during the instant of swallowing. Immediately afterward a moist vapor charged with the odor of the substances in the mouth is carried into the nose. It is at this moment, but not while the fluid remains in the mouth that one "tastes"

the aroma or bouquet of drinks. This faculty of combining smell and taste in a discriminating manner is highly cultivated by those who make a profession of judging the various teas and wines.

The digestion may be influenced by the olfactory organs in several ways—directly, reflexly through idiosyncrasy, or by some complex psychic process hard to analyze. It is estimated that it requires about 2,000 cubic feet of air to pass daily through the lungs of an adult in order to furnish enough oxygen to maintain good digestion, and, as the greater part of this air passes over the olfactory region, the content of odorous substances it contains may exert a marked effect on the alimentary tract.

That appetizing odors may make the mouth "water" by stimulating the salivary glands is well known, and Pawlow has shown that the gastric juices are fully as susceptible to the gentle suggestions of the olfactory organs. Every one who reads these lines can doubtless remember a past experience, when fragrant odors wafted by a friendly breeze from some near-by kitchen not only whetted the appetite, but also brought about in the stomach that gnawing sensation which only a bountiful flow of the digestive juices can produce.

On the other hand no one factor can exercise a more malign influence over the appetite, and with it the digestion, than foul or repulsive smells; for we must admit that, as Bassler well says, "Viewing the body as a whole, a marked disturbance in any organ outside of the digestive canal acts as a chestnut-burr irritation in upsetting the normal nervous balance of the neurologic system, and that these abnormal stimuli manifest their effects most easily on the digestive organs, which, through abundant sympathetic supply, are most sensitively balanced. "As some loathsome sight or disgusting mental picture may kill the appetite and 'turn' the stomach, so a foul odor, through its reflex action, may just as effectively dry up the 'appetite juices.'" Even after digestion has normally begun, the presence of a disagreeable odor may retard its progress, and by inhibiting the secretion of the

gastric juice, and checking the motor waves of the stomach, may allow stagnation, bacterial fermentation, and the formation of gasses and irritant decomposition products.

The influence of odors and perfumes on many people is exceedingly marked. Some there are who cannot remain where lilacs are in full bloom, or bear the odor of jasmine, others are given a headache or are nauseated by heliotrope or tuberose, while the smell of cantharides often causes vertigo and a sinking sensation in the epigastrium. Even the fragrance of roses has an irritating and nauseating effect on some. Attacks of real illness, with long trains of digestive disorders following in their wake, may be brought on by odors.

Some years ago, I saw with Dr. J. L. Campbell of Atlanta, a middle-aged woman who was effected with nausea and vomiting by the smell of fish, mutton, turpentine, or butter-beans, and unless she got away from these odors quickly, severe purging and prostration set in, rendering her as ill as if she had been suffering from some form of ptomain-poisoning. Strange to say, she could eat either fish or mutton with relish, and without any discomfort, if she could prevent their odors from reaching her olfactories.

I have seen several individuals who, having been made sick by some article of diet in the past, experienced the most lively repugnance and nausea at the slightest whiff of the well-remembered article for months or years afterward.

Dr. J. D. Thompson of this city has reported to me the case of a veteran of the late war between the states, who was surfeited with onions during his war-time experience. The cooking facilities in camp being limited, the taste and odor of onions permeated every mouthful of food and drink, and now, after a lapse of over fifty years, he cannot eat in comfort where the smell of this vegetable is in evidence.

That offensive odors may not only derange the digestion, but may even cause death, and that the most horrible, was recognized about the time of Alexander the Great. One of the methods

then used for executing a criminal guilty of some specially revolting crime was to manacle the living man hand to hand, foot to foot, and neck to neck to a dead body; and it was found that the vile effluvia emanating from every pore of the putrefying corpse, coupled with the awful psychic abhorrence, speedily quenched the vital spark of the hapless victim, no matter how powerful the physique or callous the mind.

Every intelligent observer will grant that these resentments to odors, in some cases, are real idiosyncrasies, and not the manifestation of pretense or prejudice. The fact can be explained only as a pathologic phenomenon exerting its main force on the most vulnerable point of the human economy, the gastrointestinal tract. Such conditions can occasionally be aided by a general toning up of an unstable nervous system, but, as a rule, the only safety lies in avoidance, if possible, of the repulsive odors.

As offending scents may set in motion a train of morbid digestive symptoms, so, on the contrary, those that are sweet and agreeable may exert a highly beneficial effect. The Orientals appreciate much more than we the delightfully soothing influence of pleasing perfumes, having developed within themselves to a notable degree the faculty of deriving the most enjoyment from inhaling fragrant odors. The most beautiful creations pictured in the imagination of Mohammedans are the houris, represented in the Koran as nymphs of Paradise, formed of musk, who exhale from their lovely bodies entrancing perfumes.

We are told by travelers that it is the custom of many Eastern peoples to spend after each meal a season of quiet, while the air around them is rendered fragrant by a fine mist; or, this not being convenient, a bottle of their favorite perfume is constantly inhaled. Even the poorest indulge in this habit, for they all, rich and poor alike, feel that it benefits both their nerves and digestion. By smokers the aroma of tobacco is greatly prized, and all unprejudiced observers will grant that a good cigar, coupled with a serene mind, will often

materially help in the proper disposal of a hearty meal. Many have also noticed the speedy peristalsis of the bowels, which would otherwise be lacking, set up by an after-breakfast smoke.

It would seem that a psychic state favorable to the digestive processes may be induced through the olfactory fully as well as through the other senses, and I believe that this almost fallow field may be cultivated profitably by the gastroenterologists.

Since we admit that the commonly seen symptoms of cessation of digestion, spasms of the cardia or pylorus, anorexia, nausea, vomiting, or diarrhoea may be brought on by insulted olfactory organs; and, as all of us realize the danger to individuals and communities from noxious vapors, it would seem a worthy endeavor to study these agencies intelligently, that we may avoid the evil and extract the good that in them lies.

The different functions of the body vary in their importance as do different stars in brilliancy, but each has its proper role, exerting its own quota of authority. Let us not, therefore, deem unimportant this humble faculty of smell, which, though modest, is always alert and discriminating, and whose influence over the whole digestive system should be more and more appreciated.

THE TRIAD IN THE DIAGNOSIS OF SYPHILIS.

By James A. Keiger, M.D., Greensboro, N. C.

The part that syphilitic infection plays in the morbidity of a community is of no slight consequence. When we consider the infection among the "innocents", wives and children, we are profoundly impressed with the importance of diagnosing and treating the disease at the earliest possible moment and thus preventing the spread to those members of society who cannot protect themselves. The sanitarians believe that syphilis is the one disease whose dissemination can be most easily prevented.

By the use of one or more injections of arsphenamine the patient can be rendered non-infectious for the time being, but not cured. Yet, treatment cannot, and should not, be instituted until the diagnosis is certain. No person should be branded a syphilitic unless he be one.

To arrive at a correct diagnosis we must use the means at our command. The triad of findings in making up our decision are:

1st. The history of the case as given by the patient.

2nd. The physical findings by the physician himself.

3rd. The report of the laboratory technician.

In syphilis, as in other diseases, sympathetic listening and sympathetic questioning, together with careful examination will put the facts before us. It will depend upon the stage of the disease as to the history the patient will give. In primary cases there will be definite dates of exposure, ranging from two to six weeks. As a rule chancres are single, may be multiple and are not very painful, unless there be a mixed infection. On examination the typical lesion, in my experience, is covered with a grayish exudate, or pellicle, and shows induration when palpated.

The glands in the groin may be enlarged, but seldom very tender. The atypical lesion may show simply an erosion with no infiltration, or may show chancroidal characteristics. It is for this type that we need the laboratory. The dark field is the method of choice, since the Wassermann may not become positive until later. According to Craig, of the Army Laboratory, positive findings in chancres are as follows: 1st week 36.3 per cent. 2nd week 59.3 per cent. 3rd week 68.9 per cent. 4th week 77.2 per cent, and 5th week 81.3 per cent. We conclude from these facts that the blood test is of value, but a dark field is preferable when it is possible to have one made. For we get 100 per cent positives, providing the lesion has not been treated with various antisepsics.

The diagnosis in the secondary state

is not quite so difficult as in the primary, for the patient will give a more definite history. He will have had a lesion which healed slowly and following this the appearance of a rash. Also he may complain of a headache, sore throat, falling hair, loss of appetite and general malaise. Careful physical examination will reveal a recent scar, a florid or fading rash, general glandular enlargement, possibly mucous patches, falling hair and usually slight temperature. If the laboratory reports one, two, three or four plus, it is well to consider such cases positive. Hagen reports positive Wassermann test in 96 per cent of secondary cases. The physician must exercise his judgment in the remaining 4 per cent. If the history and physical findings are sufficient to warrant a diagnosis of syphilis, then treat such cases as syphilitics, relying on the therapeutic test to confirm our suspicion.

Now passing to late or tertiary syphilis we find the problem somewhat different. Whereas, in primary and secondary cases the community was in danger, it is now the individual who is wounded and in need of help.

The symptoms given may suggest anyone of a number of diseases, encountered in daily practice. Such complaints as rheumatism, headache, general debility, heart trouble, ulcerations, loss of hair, difficulty in locomotion, failing memory, and in the cases of women, abortions or miscarriages, should make us think of syphilis. As in primary and secondary cases the physical examination should be carefully and painstakingly made, noting more closely the condition of the reflexes and the reaction of the eye to light. If the history and physical findings are suggestive of syphilis, I think it is well to confirm the diagnosis by means of the Wassermann test.

Having thus far considered in a general way the triad in the diagnosis of syphilis, let us now take up more in detail the laboratory test. I do not believe in relying on the Wassermann entirely to make a diagnosis, but I do like to have my suspicions confirmed by it.

In my practice I consider a two, three or four plus reaction as positive. A one plus in a patient without any evidence of infection, calls for another test. If still one plus, then I give a provocation. Following this, as a rule, the test will either be negative or jump to a two or three plus.

It is well to remember that a number of things can cause a false reading. No specimen should be examined if the patient has been drinking, and no specimen should be allowed to become contaminated with bacteria. And, too, the druggists prescribe for a great many patients in whom we get false negatives. There are a few patients, according to some writers, who persistently give negative reports. It is a good rule to follow, I think, when patients, clinically, are syphilitic, to treat them as such.

There are many things yet that could be said regarding the diagnosis of syphilis, but time will not permit. But may I add in closing that, when once the diagnosis is made, the treatment should be thorough, over treatment if such is possible, rather than under treatment.

THE HEALTH OFFICER'S GOLDEN RULE.

By Dr. R. S. McGeachy, Health Officer,
Kinston, N. C.

My ideal of the relation between the Health Officer and the General Practitioner would be one so intimate that the General Practitioner would look upon the Health Officer and the Health Department as indispensable agencies in the furtherance of his work. Just how to perfect such an ideal relation will take a far smarter man than I am to tell you, but I do hope to enumerate a few rules that I think we should rigidly adhere to.

First—I think that we should strive to be of service to the G.P. in our territory in every way possible—just how to be of service will have to be worked

out by the individual Health Officer. Those of us who are conducting clinics of any kind should let the G. P. know we are catering only to that class of cases that they themselves do not wish to treat. If the Health Officer personally conducts the clinic, I do not know but it would be a good idea to refuse to treat or examine anyone that is not referred in writing by a physician.

"Experience is a dear teacher" and I think that we should profit by the experience of our mistakes. I have little patience with the person that is constantly saying "I done it and I told you so", but to make this paper any way effective, I feel that it is absolutely necessary to call attention to some of my mistakes and those of others. I feel that it is the height of imprudence for us to question in any way the diagnosis made on a report card; to illustrate—one of my most loyal supporters of the Health Department in my county reported a case of scarlet fever to one of my predecessors and he went to the house, examined the case and put up a measles placard without saying a word to the physician. A colored physician, whose cooperation with the Health Department is 100 per cent perfect, reported to me three (3) cases of measles—just previous to his reports several cases of scarlet fever had been discovered in this same neighborhood and I felt confident that these cases were also cases of scarlet fever, but without question I ordered a measles card displayed. On this physician's next visit his suspicions were aroused and he came to my office, as he often does, and asked me to go with him to see the cases. We were both sure after our examination that it was scarlet fever, but as the ultimate results were practically the same, I told him that we would leave up the measles card—I now look upon this physician as one of my best friends in Kinston, and I know that he is an ardent supporter of the health department.

Now for my mistakes—one day a nurse employed by one of the mills to do community work, called the office and told the clerical assistant to ask me to go to several homes in her territory

as soon as possible to see some children that were sick—she said that she thought that it was scarlet fever, for she had seen all other eruptive diseases and it was not like anything she had ever seen. I think that the sanitary inspector must have sensed trouble for he insisted on going with me—when we visited the homes we found 11 cases of scarlet fever in 10 homes. Instead of using a little common sense and putting up scarlet fever cards at only those places where there had been no physician in attendance, I went like a fool and put up cards at every place where the nurse had diagnosed a case of scarlet fever and the next morning it got so hot for me that the sanitary inspector kindly informed me that I had some business in La Grange that day and it was rather late in the afternoon before he would allow me to return. As it turned out one of the strongest opponents of the nurse's diagnosis finally decided it was genuine scarlet fever, but he would not say that I had acted right and I heartily agree with him. This experience gave me an opportunity to say what I had been itching to say for some time—I told the physicians at the next medical meeting that I wanted them to feel and know that I was ready night or day, rain or shine, to walk with them, if necessary, to any part of the county to see a case that they were not sure about, but to please never again put me in a position where I would have to investigate reports by outsiders.

I think as far as possible we should grant the requests of the G. P. Years ago I was attending a case of scarlet fever in Raleigh and the six (6) weeks quarantine would have been out on Tuesday—on Saturday a circus was coming to town and the parents were very anxious to take the child to see the parade. These were good, conscientious people and as I had seen the case extra often, I know that the child was perfectly well and told them I did not think there would be any trouble about her going. When I called up the health officer, he went "up in the air" and said "No, indeed, the child must stay in 42 days and the circus comes on the 39th

day." I knew then and I know now that the child was as well on the 39th day as she was on the 42nd.

One of the professors at Bellevue told us that while we were young in the profession when we got a call to see a child and grandma was about, to be sure to find out, if possible what she thought was the trouble and try not to be so "blamed" conscientious as not to agree with her diagnosis and I think we should try to agree with the G. P. when he calls us to see a case with him, for he is more than apt to be right.

Another courtesy that is due the G. P. is, I think, to positively refuse to remove a placard from a home until the physician in attendance says it may come down. Some months ago some of the physicians in my territory got to sending persons to me to give immunizing doses of antitoxin. I gave these doses as requested, but at our next medical meeting, I told the physicians that I was perfectly willing and glad to do this for them, but that I thought that it was work that should be paid for and I felt that they were due the pay. They all agreed with me and a motion was passed authorizing me to refuse to give it even on request by a physician, except as an act of personal favor to him.

I feel that we should be very careful how we advertise free vaccinations, etc. I am heartily in favor of the vaccination of everyone possible, but if the G. P. can get a fee for vaccination, I think it nothing but right that he should get it. I try not to publicly advertise free vaccinations outside of my office, except in the public gatherings and in schools—in all reference to vaccination in the public press I urge the people to see their physician and be vaccinated. You may rest assured the people will find out you do it free and come to you for it.

I have always argued that the taxpayers are due some returns for their money and except for the protection their citizenship in any state or community guarantees them, I think that the people derive more returns from the health department than any other agency. I found a note on my desk one

day soon after going to Kinston and it read something like this, "Miss Blank prescribing for Dr. Doe's patients"—where this note came from, I have never been able to discover, but it gave me an idea and I have directed all the nurses when they enter a home to ask the first thing, whether they have a physician or not and if they have to urge the people to carry out the physicians directions to the letter and under no circumstances to give directions. The sanitary inspector has orders to always adhere to the "Golden Rule" in trying to enforce the requirements of the state sanitary laws and if there was ever a more faithful, conscientious worker than the sanitary inspector of Lenoir county, I have not known him.

Last year in Winston-Salem was the first Health Officers' Convention that I had attended and some of you will remember how green and timid I was then and I am just as bad off now, but I cannot close this paper without a little note of warning to the "powers that be" at headquarters and that is this, have the field representatives from H. Q. apply the "golden rule" in all their work in the field; to illustrate, some months ago a sanitary inspector from H. Q. reported for duty in my territory and in talking with him the first day, I mentioned what I thought was an important sanitary problem that the sanitary inspector and I had tried to solve and asked him to help us out. He kindly informed me that that kind of work was not his business. I apologized most humbly and refrained from making any more requests. About two days after that our sanitary inspector informed me that this man was about to publish a statement to the public. I asked him to let me see what he was going to publish and found that he had gone to the trouble of having typewritten a statement to the effect that there was not a privy in Lenoir county that would comply with the requirements of the state law and informed the public that he had come to see that they were built. He gave the name of his boarding house and its phone number and did not mention the health department. That

sort of hurt my pride and I told him, in a very few choice words that he was not to publish any statement without my O. K. to it, etc. Just before this happened a representative from another department visited our field and after his departure the head of the department wrote and asked my opinion of his work and I answered frankly. I received a lovely letter in reply to my letter of criticism, which showed me that H. Q. is always anxious to work in harmony with the field and it is my opinion that by united effort and the application of the "golden rule" and only by these methods can we hope to attain in any degree the sympathetic relation of all agencies that look to the increased happiness and usefulness of all mankind.

GAS BONDS—AND THE MISTAKE OF TRYING TO JUDGE AN INDUSTRY AND ITS SECURITIES BY A CASUAL GLANCE AT SURFACE INDICATIONS.

By Samuel O. Rice, Educational Director,
Investment Bankers' Association of America.

Time was when somebody made money by manufacturing bootjacks. Today there is no market for bootjacks and only a few, if any, are made. A bootjack factory would be an extremely poor basis for an investment. Bootjack making is virtually an obsolete industry.

Many persons have an erroneous notion that the industry of making manufactured gas is somewhat tending to decreased production because of electricity. They conclude that because electric lighting has caused a great decrease in the use of gas for lighting homes and streets that the market for gas has been reduced. That notion comes as near being an absolute error as any notion could be. In the last 10 years production of manufactured gas in the United States has increased 100 per cent. In the same period consumption of gas for industrial purposes increased 1,000 per cent in the United States.

The manufactured gas business was

scarcely ever more prosperous than now. The reason is because of the increased use of gas in industry. Modern heating processes in manufacturing use great quantities of gas, for gas has been found to be the most economical and efficient in heat treating processes of manufacturing.

Of course, the casual observer may not be blamed for erroneously concluding that electric lighting has cut in on the gas business. It looks that way on the surface perhaps, but that simply shows how dangerous are surface indications. The fact is that electricity really did the gas industry a service when it took the little home-lighting load off the gas companies and enabled the gas companies to use their capital and energies for developing the larger industrial field. Electricity is cheap for power, but expensive for heating purposes. Gas is cheap for heating purposes.

Gas also has the advantage of diversified use. In periods of depression people do not stop using gas stoves. In the future development in the use of gas, men of long experience in public utilities confidently predict that gas will be increasingly used for heating in cities. Transportation of gas is much cheaper than transportation of coal. Not only is rail and water transportation of coal expensive, but local hauling of coal is becoming an expensive proposition in many cities. The indications all point to an increased use of gas for heating homes and business buildings in the large cities.

The foregoing is, of course, openly conjectural. It is, however, sound. The future of the gas business seems assured. Certainly its present situation is gratifying. I am led to write this because I have heard a number of surface-indication logicians object to gas bonds because electricity had almost usurped gas lighting in homes. One such person even advised a widow to sell certain fine gas company bonds her husband had left her. It was abominable advice, based on ignorance. The above bonds in question were safe, high-yielding, very desirable.

Perhaps I may be a bit tiresome in repeatedly pointing out that an investor should go to some honest, dependable authority to learn the true worth of any investment he is considering. What sort of an investigation can any man make of an enterprise in which he contemplates investing? He can, if he has time, visit the factory, the electric plant, the gas plant or other enterprise whose bonds he is considering. He can look at them carefully, go over the books, and then what does he know? How can he possibly be competent to judge whether it is a good efficient plant, whether its different units are all right, whether as a whole it can produce and meet competition sufficiently well to pay interest or dividends? How can he know that the "corporate structure" is right? By that I mean how can he determine accurately that it has been financed most efficiently, that the right proportion of common stock, or of preferred stock, and of bonds has been judged? No man unless he is an investment banker can do that and usually investment bankers have engineers, accountants, attorneys and all sorts of specialists to help them do it.

In these articles I have determinedly endeavored not to try to persuade any one to buy a particular issue of any investment security. Instead, I have tried to show how complex a business is the making of sound investment securities. In my own little investments I never buy anything without talking it over with one or more investment bankers. I suppose I am in as good a position as any one could be to garner "inside tips", but strange as it may seem I have found the much-talked of "inside tip" virtually non-existent. I have found, however, a world of sound, dependable information, frankly and openly given. As a result, if I may be pardoned a further personal allusion, I have never lost a penny in investments, either my own small funds or money of two estates I have administered. It all depends on the investment dealer you select. I know several hundred honest and competent ones—surely any physician is good enough judge of character

to select one and not put his money into schemes of crooked or incompetent promoters.

PUBLIC HEALTH WORK IN THE MOUNTAIN VILLAGE OF HIGHLANDS, N. C.

By Mary E. Lanham, M.D., Highlands, N. C.

Highlands is a little village high up in the Blue Ridge Mountains at an elevation of 3,850 feet above sea level, where the air and the water are so singularly pure that good health would seem to be almost obligatory.

In 1922 Miss Margaret Harry, Red Cross Public Health Nurse stationed in Highlands, and I made an examination of the school children in Highlands and in six surrounding school districts. We found that 60 per cent of the children had adenoids and enlarged tonsils, 16 per cent abnormal lungs, 12 per cent abnormal hearts and over 60 per cent had worms. Thanks to Miss Harry's untiring efforts, the State sent an equipment of doctors and nurses and the tonsils and adenoids were removed from 70 children. This was not a very large percentage of the total number but a very gratifying one when it is remembered how greatly our people fear these operations and how strongly they are prejudiced against them. The parents have been so impressed by the improvement in their children that the next time the State offers the opportunity, it will be eagerly accepted. The parents were especially pleased with the marked improvement in the school work of their children and they realize fully the difference between the ability to learn before and after the operations. Through the year, Miss Harry has had many dental clinics so that the children are well looked after as far as the nose and throat and teeth are concerned. There are other highly undesirable conditions in our schools which need correction, which are manifested conspicuously by the report of 470 days loss of time by absence from school during the

school year 1922. This is a big loss of time in a school of only 100 children. What is the cause of it? Carefully tracing out these absences, we found that they were caused by acute infections of the nose, throat and larger bronchi. Going into the homes of these children we also learned that in many homes the parents were equally affected with the children so that a good deal of working and earning capacity was lost by the father and mother.

The parents complain bitterly about the school being a hot bed of contagion and a breeding place of colds and say that from time school starts until it closes that the village is deluged by one wave after another of violent epidemics of colds. Again and again it is proven that one child has infected the school and subsequently the community. These colds are frequently brought in from the outside and they spread like wildfire among us. When that particular type of cold is characterized by its tendency to induce pneumonia and pleural effusions, the results are still more disastrous. What would be the harm in having the teachers carefully scrutinize each pupil as it passes into her school room and if there is any sign of running at the nose or cough, or sore throat, why not send the child home for a few days until the danger of infecting the other children is over? The village could pass a law that such a child must not leave its home premises under penalty of a fine until permission to return to school has been given by the Public Health Nurse or the Public Health Officer. We may say that we cannot quarantine against colds and flu but is this true? Is it true that it would not pay to forbid children with acute respiratory infections to infect the whole school and the community? Why, more especially, should we not quarantine against flu which is an exceedingly dangerous infection? Just because we do not do so is no reason why we should not. In the Summer of 1922, an entire family of eight came down with an attack of a virulent type of flu. All the family were in bed and the father developed double pneumonia and double

pleurisy with effusion. When some tourists in the next door came down with the same type, four cases in one family contracted by playing with the children of the first family. As soon as I knew of it, the village family was thoroughly quarantined and the tourist family were shut up in a part of the boarding house upstairs away from all the rest where their meals and all their needs were supplied to them. In the dining room below them, forty diners were daily served, but, thanks to the severe quarantine, not another case of flu developed. In the winter of 1923, during my absence, flu broke out and not the slightest attempt to quarantine was made. It swept the village from end to end, putting whole families in bed, causing death and suffering and loss of time and money which might have been saved by a strict quarantine. Why should we not quarantine flu?

Our teachers complain about the inability of the children to study. They have no power of application, no interest in their studies and simply sit there "like a bump on a log" waiting for the hour of their release. In our schools very many of the children are dull, befogged, and headed for degeneracy, for a low grade of mentality, and we are wasting our money on trying to teach what is not there to be taught and we are raising a crop of inefficient workers that will not benefit the community as they should. It is an enormous economic loss that we are facing when we permit incompetency to be developed instead of competency and these dull brains represent two or three conditions which it might be well to attempt to change. Going into our school rooms, one is at once impressed with the syndrome of mouth breathing. Many of the children have the thick skin, the heavy lids, the dull eyes, the saddle back nose, and the open mouth of the insufficient activity of the thyroid or the imperfect metabolism of iodine. Why not give these children a daily dose of iodine for two or three years of their school life and see if the fires could be made to burn a little brighter? This could best be accomplished through the

aid of propaganda from the State Board of Health for the divinity which used to hedge the king now surrounds the actions of the State Board of Health and if it should take snuff, everyone in our community would promptly sneeze. The State Board has very successfully put through typhoid measures, why not try these? It may be that iodine is what we need in our country and that its lack is back of the slow speech and slow thought and slow movements so exceedingly characteristic of our mountain people, and that imperfect functioning of the thyroid may account for much sluggish mentality.

Many of these mentally deficient children are restless, do not sit still, are continually scrubbing around in their seats. Sometimes the cheeks are too red and the line around the mouth a little too white, and the mother says that the child does not sleep well, is restless and often cries out. Miss Harry and I found that over 60 per cent of the school children in Highlands and in six adjoining districts, had worms and some of them had two or three kinds. A thorough examination of the feces of these children revealed a shocking condition of infestation by ascaris, oxyuris, monads, and there was one case of trochocephalus dispar, but no hookworms. If only these children had hookworms we could manage it all right because everyone respects the harm hook worms admittedly do, but round worms? What harm do they do? "Why I had them when I was young, all children have them, they never do any harm." That is precisely the point, but you cannot convince the parents that if they had been properly cared for when they were young that they might not be quite so inefficient as they are. The belief that worms do no harm is too firmly established in the creeds of our people to be easily changed. Is this superstition based on fact? Are worms as harmless as we would like to think they are? As a rule, the round worm is found in over 60 per cent of our school children within a radius of eighteen miles around Highlands. What does Ransom say about them? Ransom says:

"Thanks to the work of Stewart, we know that the newly hatched worms, instead of simply settling down in the intestine of the human being to undergo their development to maturity, first leave the intestine, pass to the liver and then to the lungs in the blood and lymph circulations, and finally come back again to the intestine by way of the trachea and esophagus. The larvae after having undergone a partial development during their tour, are able to continue their development in the intestines and to reach a fertile maturity. After the eggs are swallowed and the larvae are hatched out in the intestine, they promptly pass through the intestinal wall and are carried to the liver by the portal circulation, cross the capillary zone of the liver lobules, enter the central veins and so reach the hepatic veins, the vena cava and the right side of the heart. They may pass rapidly through the liver or be delayed for several days, in the latter case going on with their growth and development. Some larvae may be permanently stopped in the liver, become encapsulated and die there. From the right side of the heart, the larvae are carried to the lungs and the air sacs. Finally they pass up the trachea and down the esophagus and so are carried back to the intestine where they reach maturity in about two months. Some of the larvae that reach the lungs may be carried on to the left heart, and from there are distributed to various parts of the body through the peripheral circulation. They may be recovered from the peripheral lymph nodes as early as 24 hours after the eggs from which they have been hatched were swallowed, and they have been found still alive in these locations as late as thirty days after the ingestion of the eggs. Fulleborn has recovered them from the brains of experimental animals. Some of the larvae that are hatched in the intestine, instead of passing directly to the liver through the portal system, find their way through the lacteals to the mesenteric nodes; some of the larvae that reach these nodes suc-

ceed in escaping from them and are carried to the thoracic duct or reach the liver."

Since eggs are continually found in the feces, are we justified in inferring that they may also be continually hatched in the intestines? Are these migrations of the larvae through the liver, lungs, lymph nodes and lymphatics, the heart and peripheral circulation more or less persistently maintained?

There is an abundance of clinical proof of the harm ascarids may do in the intestines and liver and a good many clinical suggestions that the brain, and especially the meninges, may be irritated by their toxins. Worms may do a great deal of harm by getting into the pancreatic duct, the bile ducts, and the appendix; by causing abscesses in the liver; by irritation of the lungs as shown by the "worm cough"; by irritation of the intestinal nerves and especially by inducing vagotonic crises; by mass influence in causing torsion, obstruction, intussusception and gangrene; by lesions of the walls of the intestines and enteritis with blood and mucus in the stools; by inducing typical peritonitis after laparotomies; by dying in the intestine, rotting there and causing toxemias. The mass influence of clumps of ascarids may demand an operation for an "acute abdomen," for appendicitis, intestinal obstruction, torsion, strangulation, etc. The operation seems to be typically indicated when there is fecal vomiting, the abdomen is distended, the pulse too frequent for the temperature. In these cases of masses of worms, the effect of santonin cannot be depended upon for it often passes through the agglomeration of worms without difficulty. Schloessmann gave 0.05 of santonin three times a day for six days without breaking up the mass or killing the worms which were all found alive at the operation nine days later. A girl of 11 died in 24 hours with symptoms of peritonitis plus ileus caused by a mass of 60 ascarids which had injured the walls of the intestine and caused an acute toxemia. In a girl of four the toxemia was more insidious and the strong, vigorous

child resisted the progressive weakness and heart failure for two weeks. Moore reports the case of a girl of six who began vomiting a greenish fluid with a strong fecal odor. The pain was severe, the abdomen greatly distended, the bowels had not moved for two days, temperature subnormal, pulse rapid, respiration labored and fast. An operation for intestinal obstruction and intussusception was performed and revealed a large mass of round worms coiled around a fecal impaction. When an ascaris enters the appendix, the vagus may be so irritated that there is difficulty in swallowing, excessive salivation, a choking sensation in the throat, rapid respiration and crises of dyspnoea. Torregrosa reports a case of appendicitis just ready to be operated upon when an ascaris was discovered in the stool and a vermifuge secured a complete recovery. Nicoll says that he found ascaris to be a cause of enteritis in somewhat less than 10 per cent of his cases, so that mucus and blood should always be examined for ova. Lefebvre reports four cases of post operative subacute peritonitis in which profuse vomiting developed suddenly, followed by the facies of peritonitis but without enough severe local findings to account for the grave symptoms which were all relieved when an ascaris appeared in the vomit. Typhoid may be so closely simulated that there seems to be no doubt of the diagnosis. Moore reports the case of a boy of ten who had not felt well for ten days. He was perfectly well until he began feeling weak and sick with severe occipital headache and abdominal pain. For four days, there was vomiting, anorexia, tympanitis, epistaxis, flushed cheeks, heavily coated tongue, foul breath and a decided diarrhoea. The skin over the abdomen was mottled but there were no rose spots. Typhoid, paratyphoid and colon bacilli reactions were negative. These symptoms and a daily rise of temperature to 104 to 105 were constant for ten days when a round worm was passed, santonin was given and 27 huge worms were passed, the pain was immediately re-

lived and prompt recovery followed. Glock reports the case of a woman of 45 in perfect health who suddenly suffered a severe attack of gall stone colic and so much pain upon pressure over the sternum that a tabetic crisis was suspected. Morphin was given and caused an ascaris to appear in the vomit. Chenopodium was given and 36 ascarids were passed. Glock inferred that an ascaris must have gotten into a bile duct. Tsujimura in operating for gall stones in a case presenting the typical symptoms of cholelithiasis, found in two cases, ascarids in the bile ducts. Makai reports the case of a child of seven who had had worms for a long time and been given treatment for ileus verminosus. The violent pains in the liver were not like those of hepatic colic, the liver was enlarged, an incision was made, an abscess was opened up and contained five living ascarids and several ova. Six and nine days later, two more ascarids crawled out through the wound of the operation. The walls of the abscess showed that the ascarids must have been there for several weeks. There were no connections with the bile ducts and Makai was convinced that the larvae developed locally.

My attention was first directed towards the possible evil that worms can do by a woman who came in gasping for breath, almost fainting and speechless. She was nothing but a bag of bones, so weak she could hardly stand and she looked exactly like a clay eater.

Temperature 96.8, pulse 120, weak and irregular, blood pressure 85, hemoglobin 35, R. B. C. 2,225,000 absence of hydrochloric acid in the stomach contents, and the feces full of ascaris eggs. Her husband and six children were all poisoned by worms and in an equally shocking condition. The next case was a man of 55, a good carpenter, intelligent and belonging to the better classes. He had been told by his doctor that he was dying of Bright's disease. He was too weak to work and suffered a great deal from pains and distress in the cardiac region. There was a small

percentage of albumin in the urine but no pus or casts and after ascaris eggs were discovered in the feces and the worms were expelled, he regained his full working efficiency. A child two years old, would stretch out in his mother's lap, turn a ghastly, ashy blue, get cold, become unconscious, almost stop breathing, and seem to be dying in collapse. For two months he had been treated for tuberculosis and for typhoid, but I could find no proofs of either.

An eminent professor of internal medicine in one of our best colleges, saw the child with me and could only say that death was inevitable without knowing just why. The feces had been repeatedly examined and although they contained an abundance of woolen and cotton fibers and cat's hairs, there were no ova. Santonin had been given without results. One morning when heat and whiskey failed to revive him, another examination of the feces was made and one single ascaris egg was found. Frey's Vermifuge was poured in and that brought the worms and complete recovery. I soon learned that in many cases santonin could not be relied upon for either diagnosis or treatment. A girl seven years old, was making a good recovery from a severe attack of flue pneumonia when suddenly everything went wrong. She had such violent chills that her mother nearly roasted her before the blazing fire trying to get her warm. The lungs were improving, what could be the matter? I had not the least idea until the child vomited a dead worm and another worm crawled out through her nose. She was given a vermifuge and improved at once after several worms were expelled. In this case the feces were not examined. A young man of 28 was violently ill with typhoid; delirious, comatose he yet managed to pull through but after eight weeks recovery seemed far away. We were all worn out with the case until one day a dead worm, half decomposed, was passed, a vermifuge was given and secured a prompt recovery. In this case I did not examine the feces. A man

begged me to see his mother, 63 years old, because her doctor refused to go back saying she was dying of typhoid and nothing could be done. Her face was flaming red, with a cyanotic cast, she was delirious, or comatose, with a greatly distended abdomen, and a full bladder leaking bloody urine. Temperature 103.4, pulse 120, respirations 40 and skin drenching wet with sweat. She had been sick for six weeks and for a week had passed bloody urine. The emptying of the bladder by a catheter gave her relief and quieted the delirium but the temperature did not come down by sponging. In the next room was a girl of 14, also down with typhoid, temperature 103, sick for two weeks. A careful examination of the water supply showed no probability of contamination. The feces were examined, ova found, a vermifuge was given and worms expelled. Struck by the coincidence, the grandmother was given a vermifuge with the happiest results; in a week after the worms were expelled the dying woman was sitting up and getting perfectly well. In a dirty cabin, on a dirty bed, a woman of 28 was tossing incessantly about with pain and fever while her gaunt, hollow eyed husband and children stared at her helpless and afraid. The backache and headache were intolerable and to this suffering was added jerking and twisting almost like convulsions. The breath was very foul, the tongue thick with a dirty, fuzzy coat, the microscope showed the feces full of ascaris ova, in three days the worms were driven out and recovery was prompt. The baby was an awful sight, its bones sticking through the thin, yellow skin, no flesh, no muscles, no fat whatever, hardly anything but worms and the other children were not much better off nor the father. Higher up on the mountain was another cabin, and another family of poor white folks, with a gaunt skeleton of a boy of 14, who could hardly stir, he was "so short of breath." His heart in the sixth space was distended way over to the left and the loud systolic murmur at the apex was heard all through the left side of

the back. Anemia extreme, hemoglobin only 30. Every member of this family of ten had worms. A woman of unusual intelligence and experience had nursed many cases of typhoid. She sent for me when her daughter of 14 came down with "the fever." I have learned never to make a diagnosis of anything in the mountains without an examination of the feces, so in spite of the backache and headache, the dull eyes and high fever, we waited for the microscope to decide whether it was worms or typhoid, ova were found and in three days the typhoid disappeared. We constantly hear in the mountains of "ten day cases of typhoid," how many of these are typhoid and how many are worms? I have had a good many cases with symptoms of meningeal irritation. A young man of 21, had all his life suffered from attacks of violent occipital headache and pain in the lumbar region. These attacks would come on slowly with a steady rise in temperature for a week or more, would last for a week or ten days and then leave him exhausted and depressed and unable to eat. When I first saw him, his head was drawn back he tossed incessantly, not lying still for an instant, and was frantic with pain so that morphine had to be given. As his temperature rose to 104, he became very delirious and hard to control. As we could not reduce his temperature by sponging or by wet packs, and as there was a history of worms, we gave santonin with calomel and the attack was over and the worms expelled in 24 hours. Thereafter, at the first sign of headache or backache or "sick feelings," a good dose of santonin and calomel was given and repeated the next day. He has never had another attack. Think what a difference it would have made if these attacks had been cut short in early childhood. A woman became wildly delirious, with high temperature six weeks after her baby was born. She tossed incessantly, the head was drawn back, her face twitched and convulsions seemed imminent. Pelvic examination was completely negative. Because the temperature could not be reduced by sponging and because there seemed to be a

white line about the mouth, two grains of santonin and three of calomel were given and were followed by salts the next morning. The worms were expelled, the delirium, temperature and convulsions disappeared, in a week she was much improved.

A farmer in good circumstances had not been able to work for a year. Temperature 97.6, pulse 96, blood pressure 90, weight 135, height 5 ft. 10. He had no appetite, was too weak to work, and his wife was also "ailing" and the children were not well. In every member of this family of ten, the feces were loaded with ova. Two miles down the creek, was a similar family, and fifty per cent of the children in the district had worms.

As a result of our examinations made over an area averaging something like eighteen miles in diameter, we came to the conclusion that worms do harm: By inducing chronic toxemia and anemia, low blood pressure, lack of physical and mental vigor; by acute toxemia when they die and decompose in the intestines causing high temperatures, chills, and meningeal symptoms; by being pathologically altered by acute infections, especially typhoid and flu; by irritation of the intestinal walls and absorption of intestinal toxins.

Going into our school rooms and looking at those children whose intestines are full of worms, can we wonder that they do not learn? That they grow up mentally, psychically and physically in-

ferior? We are training in these seven school districts boys and girls who are predestined to more or less degeneracy. They will not make as efficient citizens as they would if they were not infested with worms. There will be varying degrees of harm done from the full catastrophe landing them among the lowest and most incompetent of the poor white folks up to those whose position secures for them the respectful designation of "poor health." When we learned that the hookworm undermined the working efficiency of the South, a field campaign was organized to overcome the "lazy man's disease." We hurled ourselves on the hookworm with all the enthusiasm of crusaders but the other intestinal parasites do not stir us in the least. First of all we should determine the extent of this infestation. How far does it reach, and how much harm does it do? Is it really of enough importance to deserve a formally organized attack? If the data accumulated should say yes, then how should the attack be made? Here are these facts: Over fifty per cent of the school children in seven school districts show signs of physical degradation caused by round worms. Generally speaking, their parents refuse to build privies. Liberty sits enthroned in the yards and queens it over filth. The hogs, cats, dogs and children are perpetually adding to the sources of infection so that in all probability the infestation will be worse in the future than it is now.

SOUTHERN MEDICINE AND SURGERY

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CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

Going Home.

To the patient, doctor and nurse, those two words carry a wonderful significance.

Going Home—the doctor says, "its safe now for me to go." Whatever may have been the cause of the need of hospital care, it is now over, "I can go home." Even the exceptional case that must go home carrying with them the uncertainty of the future, has, to some degree at least, a feeling of relaxation from the anxiety that brought them in. For the day, the week, the month or the year they have been in hospital there has been ever in mind the thought of the time when "I can go home" safe and free from my illness.

To most persons "going home" is synonymous with cure. The child is now well and going back to mother. The mother is now well and going back to her own sacred hearthstone. The father is now well and going back to all the tenderness of wife and happiness of children. Going Home means living again.

For the doctor and nurse, Going Home means a victory won. There have been days of ceaseless work and struggle which has taxed sympathy, science and patience but the goal has been attained and the patient is Going Home. Perchance not entirely well but sufficiently so that there is now little danger. For doctor and nurse "Going Home" is the ultimate goal of all endeavor. It is an expression of the one thing for which all medicine and allied sciences and

allied professions strive. Perhaps there may be some who in the enthusiasm of the work unintentionally forget that one great objective. Perhaps there may be some who even forget that the only excuse for a medical science is to maintain or restore health. Some ultra scientists act in a way that gives the impression that they are more concerned in the problem per se than they are in the results to mankind of its solution. Other selfish ones may have in mind the honor to be accorded the one who first announces some new discovery.

The honest doctor can never have any other primary object in mind than "Going Home," which also means staying at home. Maintaining or restoring health and happiness.

Education.

In an address before the Retail Merchants Association meeting held in Atlanta January 28, 1924, John Sprunt Hill of Durham, N. C., most emphatically charged North Carolina progress, which has become so outstanding in the whole United States, to **Education**. Universal education, compulsory education for children and free education for grown ups.

Money has been provided for school houses and school teachers and laws passed which compel those parents, who do not have the inherent desire, to send their children to school. The state has turned doctor and said your children are not as strong as they could be. You may be satisfied, not realizing how much better this little pill will make them feel, but for their own good they must swallow it. The results have been amazing. After swallowing a few years of compulsory education the state has caught the vision of better things while a new and undreamed of life is unfolded. Once a "vale of humility lying between two mountains of conceit" (Virginia on the north and South Carolina on the south) North Carolina has now elevated herself and lighted her beacon fires announcing to the world the dawn of a new era and a wonderful state is coming into her own. By precept for

the children and example for the grown ups there is universal education.

There is a book published which its authors choose to call "Who is Who." In it are listed many thousands of names of persons who have been counted worthy of mention. It gives some startling information. For every name mentioned in that book who finished only a Grammar School there are eighty-seven (87) who finished High School, and 800 who finished college. The proportion is 800 college graduates, eighty-seven high school graduates, and one grammar school graduate. If there were none but grammar school graduates "Who is Who" would be a slim volume. The educated men and women are the ones who are making for progress.

In this connection it is rather startling to comprehend the facts set forth in Bulletin 34 of the U. S. Bureau of Education, showing that of every 100 boys found in the fifth grade only 63 complete the grammar school, only 13 complete high school and only two finish college. Be it remembered too that these 100 were already advanced to the fifth grade. Carrying the analysis still further we find that there are 40,000 times as many college graduates who attain sufficient eminence to be listed in "Who is Who" as there are of those who advance only to the fifth grade. Obviously education is the keystone of all progress and it is no wonder North Carolina jumped forward by leaps and bounds when she put across the idea of universal schooling. With the stay in school campaigns and a larger and larger proportion each year of children remaining in school, even for the completion of grammar and high school, real progress is only just beginning and the future has in store undreamed of advancement.

College of Surgeons Meets at Winston-Salem.

The Clinical Congress of the Carolinas Section of the American College of Surgeons was held in Winston-Salem Feb. 4-5. Headquarters Robert E. Lee Hotel. North Carolina and South Carolina together making up the Carolinas section

of the College hold a clinical Congress annually, alternating in each state.

About one hundred fellows of the College in these states registered at the Winston meeting. Clinics were held in the various hospitals during the morning and general meetings for business and scientific papers in the afternoon. Monday night a public meeting was held in the Centenary church, which was well attended.

This meeting was addressed by Surgeon General M. W. Ireland, U. S. Army. In explaining "How we keep physically fit in the U. S. Army," General Ireland made clear the basic principles which will keep civilians also as physically fit as soldiers.

The college was founded in 1913 and in 1915 turned its attention to hospitals, recognizing that to standardize hospitals meant standardizing surgery and surgeons. At the close of 1923 there were in the U. S. and Canada 1786 hospitals with over 50 beds each and of these 1176 had been approved by the college.

There are five things necessary for a hospital to get on this approved list.

1. Only those surgeons who are willing to subscribe to the responsibilities of staff members, who are willing to obey hospital rules and report and describe their operations at staff meetings will be allowed to practice in that hospital.
2. There shall be no fee splitting.
3. There shall be staff meetings at which every doctor may and shall report, review and analyze hospital work.
4. Accurate records, with complete history of every case, together with autopsy findings when necessary, shall be kept in accessible manner.
5. There shall be a laboratory with full scientific service, in charge of trained technicians.

Investigators of the college are constantly inspecting hospitals of the country and are recommending them for favorable classification as soon as they comply with these five requirements.

The educational propaganda of the college to the public does not insist that only fellows of the college be called but it does advise, and explains why, only

recognized hospitals be trusted. It does advise the patient to be suspicious of a doctor who cannot take his patients to a recognized hospital. The college appeals to the sick public to demand the most honest and conscientious hospital service and to accept nothing less. The college demands only honesty when it demands that a boarding house be called a boarding house and not a hospital.

SURGERY

A. E. Baker, M. D., Dept. Editor

"A Study of Focal Infection and Elective Localization in Ulcer of the Stomach and in Arthritis."

By Dr. Nakamura, *Annals of Surgery*,
January, 1924.

It is well known that a small number of certain microorganisms of low virulence may circulate in the human body and not cause symptoms, but if they lodge and multiply in organs, or become virulent, symptoms develop, as in staphylococcal osteomyelitis or gonorrhoeal arthritis. Various facts indicate that bacteria rarely enter the blood stream through the normal skin and mucous membrane, but that entrance is prone to occur when these tissues become the seat of lesions, traumatic or inflammatory, and that when tissues, such as the tonsils, for mechanical reasons, harbor large numbers of microorganisms, invasion probably occurs at frequent intervals. The bacteria may establish colonies in certain organs, produce secondary foci, and thus overcome the resistance of the host, so that systemic disease results. Such processes are generally defined as "focal infection."

Billings has emphasized the importance of focal infection in arthritis, nephritis, and endocarditis. Davis made special study of the microorganisms in tonsils excised for a variety of clinical conditions, including chronic arthritis, nephritis, endocarditis, recurring ton-

silitis, and neuritis. Rosenow produced lesions in the stomach, duodenum, appendix, gall-bladder, iris, skin, joints, muscles, nervous system, endocardium, and kidney of rabbits by injecting streptococci or pneumococci from infected tonsils and teeth of patients who were or had been suffering from the corresponding diseases.

Many patients with ulcer of the stomach, arthritis, or other diseases believed to be focal in origin, improve or recover after complete removal of foci. Lillie and Lyons, in a study of 200 cases of myositis and arthritis, found that 79 per cent. of the patients improved markedly after tonsillectomy. The organs in which the primary foci are usually found are tonsils, teeth, sinuses, gall-bladder, intestines, appendix, cervix, seminal vesicles and prostate.

Certain microorganisms tend to invade certain tissues. The gonococcus attacks large joints and tendon sheaths, and the meningococcus invades the meninges. In acute multiple suppurative myositis, staphylococci attack the skeletal muscles with a narrow specific affinity. Jackson produced arthritis and myocarditis in rabbits by the injection of a streptococcus isolated from epidemic sore throat, which disease was frequently accompanied by myocardial and joint infections.

Certain species of bacteria, especially the streptococcus, attack many organs, and when injected into animals may localize in joints, in the mucous membrane of the stomach or duodenum, in muscles, heart, kidney, central and peripheral nervous systems, gall-bladder, and so forth. But not all of these organs are attacked by the same strain. Rosenow found that bacteria, especially the streptococci taken from original or secondary foci of patients suffering from ulcer of the stomach, arthritis, appendicitis, and so forth, have specific affinity for the stomach, the joints, the appendix, and so forth, respectively, and on the basis of these findings he has propounded the theory of elective localization.

Mental and Nervous

James K. Hall, M. D., Dept. Editor

Traumatism of Public Confidence.

Doubt of the integrity of those placed in high position begets in the people a peculiar form of discomfort and it tends to develop cynicism with reference to character. The loss of this man or that from public service because of established character-defect is not usually a serious loss. The individual can generally be replaced by an equal, if not by a better. But the loss of the confidence of the people in a trusted official has a serious effect upon the minds of the people. They become distrustful of all those in high place. They doubt their own ability to select leaders. They lose confidence in their own judgment. Their egotism is damaged, and a certain amount of personal egotism—certainty of one's judgment—is necessary in shaping individual conduct. The fall of a cabinet official and the lubrication of a prominent candidate are distressing occurrences, but neither is so tragic as the exhibition of the frailty of the judgment which selected them for high place. The real ruler of this country is supposed to be that abstraction referred to as **Popular Opinion** and when the public mind becomes perturbed because of doubt of its omniscience, temporary, political chaos is at hand. In such an unhappy situation the vociferous, self-assertive, selfish, demagogue feeds fat for awhile upon the popular passions.

To Them That Hath—

Within the past few months the State of Virginia has lost by resignation the services of a number of her best-trained state officials. Amongst these were the Chief Justice of the Supreme Court, the Superintendent of a State Hospital and the Assistant Attorney-General. Each of these officials resigned because of compensation inadequate to insure a satisfactory living.

The time has about come when it would seem that the state and the Federal Government are each largely engaged in the business of training experts for subsequent use by great corporations. Practically all the cabinet officers, for instance, upon resignation or the expiration of their terms of service retire to the ample and comfortable payrolls of corporate bodies of boundless wealth. During their term of office these representatives of the people become possessed of expert knowledge that great corporations stand in need of in their multitudinous contacts with the government on the one hand and the people on the other hand. It is a pity, however, that the government, be it State or Federal, feels itself unable to pay an official a salary upon which he can comfortably live. No man can give himself fully and adequately to his work when worried about his sustenance and that of his family. It would be economy for the people to compensate their official servants in such fashion that these servants may find it possible to give all of their talents to the duties of their respective offices.

Trained intellects are the scarcest commodities on the market. The great corporations are gradually gobbling up the best of them. What are the people going to do about it? There are those who believe, for instance, that the Rockefeller Foundation controls medical education in this country today, and that the Carnegie Foundation dominates academic circles. The only real force in the world is intellect. When the trained mind of the official of the great corporation is matched against the mind of the people's tribune it is easy to understand what happens. The people suffer on account of their representation by a kindergartner.

The next meeting of the Tri-State Medical Association will be held in Greenville, S. C., February 20-21, 1924.

Pediatrics

Frank Howard Richardson, M.D., Dept. Ed.

North Carolina has long held a well-earned reputation for inaugurating medical experiments that have proved successful. Perhaps as notable a one as any, was the experiment in postgraduate pediatric teaching in which the State University and the State Board of Health cooperated, some ten or a dozen years ago. It will be remembered that at that time these two institutions, working in harmony, engaged two instructors in Pediatrics to tour the State, one in the eastern portion and one in the Piedmont, for the purpose of giving to county medical societies that desired them, real teaching clinics such as had never been available before short of the big medical centers. Five towns constituted a circuit for each instructor, and he made his circuit in one week. Consequently, each group of doctors availing themselves of the opportunity in a given center, had a weekly course of didactic clinics. Material for these clinics consisted of cases sent in by the physicians themselves, who thus had the advantage of consultation in difficult cases, not only getting the opinion of the instructor, but also profiting by the reaction of the other men in the group toward each case studied. Inasmuch as no case came to the clinic that was not referred there by the physician, there was no friction aroused on the ground that cases were being alienated from their doctors. Each man was thus able to profit from the opportunity to attend a course of pediatric clinics without leaving his home or his practice. The whole idea was such an eminently practical one, and the experiment was carried out in such a successful manner and to such universal satisfaction, that there seemed reason to believe that a new principle in broadcasting postgraduate medical education had been discovered, and that other branches than pediatrics might eventually be thus popularized,—though of course no other

class of cases adapted itself so readily to this sort of things as did children's diseases. The war intervened, however; and it is only in the last two years that the idea has again been taken up, this time as applied to internal medicine.

Such an idea could not well be permanently hidden, however. To those who like to know of instances in which the Old North State is blazing the way for other states to follow, it will be interesting to learn that something of this sort, though considerably modified to suit local conditions, is under consideration in one of the largest of the eastern states. Here it is going to be made possible, through the use of funds made available by the State Department of Health, for any group of physicians desiring a pediatric clinic, to have such a teaching center established for its special benefit. At first these clinics will be held but once a month in each locality which asks for them. They will be taught by the Regional Consultant of the area, assisted by such other specialists as he may care to have associated with him in the work from time to time. The material to be demonstrated, as in the North Carolina pediatric clinics of a decade ago, will consist of cases sent in for the purpose by the physicians participating in the course of study. As no course will be given except at the express request of an organized medical society, (either county or local), there will be no room for criticism of the State Department of Health; as the initiative must come from the organized medical profession before any action will be taken at all. As the participating physicians are the only ones whose cases will be admitted to the clinic for study, there can be no criticism on the ground of alienating cases from their own doctors.

It is hoped that many of these cases will have been fully and carefully worked up by the physicians presenting them, before they are brought before the class for study and demonstration. All the facilities of the diagnostic laboratories of the State Department of Health will be available for the proper study of the clinical laboratory side; and

the doctor who has been following the case in his private practice will be in a far better position to give an exhaustive anamnesis, than any medical school senior or junior could ever hope to do, on a case assigned him in college.

It is believed that this is one of the most helpful forms of service that can be made available to the doctors of a rural community. There are many men who simply cannot, or else will not, leave their practices for postgraduate work, no matter how much they might profit by it and enjoy it. The question of expense—including both actual outlay and arrest of income—combined with their conception of their duty to their clientele, makes leaving home for one of the medical centers out of the question for them. When such men can have the advantages of the big centers brought to their very doors, experience has confirmed opinion, and it has been found that they welcome the opportunity offered them. If the experiment to be conducted in a small part of the territory of this large state proves anywhere near as satisfactory as it did when tried in North Carolina ten years ago, it will probably be made available for groups all over the State. What this will mean in improved treatment for the children of the State, simply cannot be overestimated.

Urology

A. J. Crowell, M. D., Dept. Editor

The early diagnosis of tuberculosis of the kidney is very important. It is recognized by certain symptoms and signs which are outstanding and definite. Its tendency is progressive and the outstanding symptoms and signs are pyuria, haematuria, inflammation, ulceration and deformity of the bladder.

The cystogram of the tuberculous bladder shows irregularity in shape on the affected side. Cystoscopically, the first changes are noticed at the ureteral opening on the affected side. It is displaced outward and backward by shortening of the ureter. The ureter at the

opening is crater-shaped and hyperaemic. Nodular swellings, granulomatous tissue and typical tuberculous ulcers are seen on the mobile parts of the bladder.

The belief that tuberculosis spreads from the ureteral ostium toward the trigone is erroneous. After the ureteral opening, it next involves vertex and mobile parts. This is due to the distribution of the lymph vessels. The trigone of the bladder is poorly supplied with lymph vessels through which the infection spreads, therefore it does not become involved early in the course of the disease. Freedom of trigonal involvement and the presence of submucous nodules on the vertex and in the mobile parts signifies tuberculosis.

In renal tuberculosis, the bladder is involved in about 90 per cent and the male genitalia in about 40 per cent, while the genitalia of the female is involved in only about 2 per cent of cases. The epididymis, seminal vesicles and prostate seem to be predisposed to tuberculosis.

Theoretically, the diagnosis of renal tuberculosis is easy but practically it is not always so easy. Frequency of urination, both day and night, with a few pus cells and an occasional R. B. C. in the urine, which is free from bacteria, is suspicious of renal tuberculosis and especially when accompanied with the X-ray and cystoscopic findings above-mentioned. Pain is present in advanced cases of renal tuberculosis and is increased by pressure on the anterior abdominal wall, the paraumbilical, subcostal and lumbar regions. The pain associated with the frequency of urination occurs before and after voiding. Repeated microscopical examinations should be made for tubercle bacilli in the urine and guinea pigs should be inoculated with the urinary sediment. The urine may first be treated with acid fuchsin to destroy other bacteria than tubercle bacilli as advised by the Mayo clinic urologists.

If only one kidney is involved, the cystoscopic and X-ray pictures usually identify which one is diseased, but the ureters should be catheterized to ascertain definitely whether one or both are

infected. By injecting oxygen into the perirenal fat, the tuberculous process may occasionally be demonstrated very clearly.

Nephrectomy is the ideal treatment when only one kidney is involved. If bilateral, the treatment is hygienic and constitutional. It is better to have two tuberculous kidneys than only one and it a tuberculous one. As a rule, the bladder involvement disappears without further treatment after nephrectomy.

Eye, Ear, Nose and Throat

J. P. Matheson, M.D., Dept. Editor

I wish to call attention to an article by Dr. Cornelius Godfrey Coakley of New York appearing in the January number of the Southern Medical Journal. The title of this paper is "Paroxysmal Cough, A Frequent Symptom of Infection of the Para-Nasal Sinuses in Children."

The importance of Paroxysmal Cough, a Frequent Symptom of Infection of the Para-Nasal Sinuses in Children is shown. This may be due to tonsils and adenoids, to hypertrophied lymph nodes on the posterior and lateral pharyngeal walls, or to lingual tonsil hypertrophies, or to imperfect tonsillectomies and adenoidectomies.

When there is an absence of all these sources then we must look elsewhere for the cause. Dr. Coakley urges the importance of a careful examination of the nasal sinuses including the use of the nasopharyngoscope and X-ray. Dr. Coakley also urges the importance of each and every laryngologist learning for himself the proper interpretation of radiographs of the accessory nasal sinuses, and of not taking for granted all that the radiographers tell them about the plates. After the diagnosis of infection of the sinuses has been made in children, the treatment varies but slightly from that of the adult.

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Roentgenology

Robt. H. Lafferty, M.D., Dept. Editor.

In January 1924 issue of the American Journal of Roentgenology Nichols of Cleveland has an article on Hydronephrosis in which the two opening paragraphs are very striking; he says:

"In our clinic the studies of the histories of cases of hydronephrosis shows that in more than thirty per cent previous operation has been performed for cholelithiasis or appendicitis without subsequent relief of the symptoms. Such simulation of symptoms in appendicitis, gall bladder disease and right side hydronephrosis clearly indicates the importance of pyelograph in the determination of the differential diagnosis.

"Cabot pointed out in 1913 that in many cases pyelogram of the suspected kidney is the only means by which an early hydronephrosis can be diagnosed. If this is true of early hydronephrosis it is evident that the diagnosis of later cases can be easily confirmed by the same method."

And in this article he discusses the normal pyelogram giving some beautiful cuts and also some cuts of abnormalities.

Dr. H. K. Pancoast in the Annals Clinical Medicine 1923 ii, 8-1-23 has an excellent article on Roentgenological Studies of Pneumoconiosis and other fibrous conditions of the lungs. He shows that the two most frequent causes of fibrosis of the lung are tuberculosis and pneumoconiosis which may occur simultaneously and which are very often clinically similar, though by the X-ray it is possible in many cases to distinguish between the two conditions even when in the same lung. He asserts that the inspiration of dust is not in itself harmful and that it is the quality rather than the quantity that is important. Pneumoconiosis is produced by dust that carries a large quantity of

silica. He divided the stages of the progress from the Roentgen standpoint into the following three heads:

1. Peribronchial and root thickening.
2. Localized parenchymal fibrosis.
3. Diffuse fibrosis.

News Items

Notice.

The Tri-State Medical Association of the Carolinas and Virginia is to meet in Greenville, S. C., on Feb. 20-21, 1924.

The officers of the association have requested the local committee not to provide for any entertainments that may interfere with the scientific work and the main objects for which the members are to be assembled. We are endeavoring to act within the scope of our instructions from the officers and at the same time afford the members the opportunity for the best meeting in the history of the Tri-State Medical Association.

Make your reservations in the Imperial or Ottaray Hotels. As the capacity of these two hostleries will probably be crowded it is requested that arrangements be made for at least two in a room, if possible.

The local committee for arrangements from the Greenville County Medical Society is composed of:

Dr. L. O. Mauldin, Chairman; Dr. Hugh Smith, Secretary; Dr. J. L. Anderson, Dr. R. C. Bruce, Dr. W. C. Black, Dr. E. W. Carpenter, Dr. C. B. Earle, Dr. C. W. Gentry, Dr. S. G. Glover, Dr. I. H. Grimball, Dr. A. S. Pack, Dr. W. H. Powe, Dr. H. D. Wolfe.

For information as to hotels write the proprietor of the Imperial Hotel or the proprietor of the Ottaray Hotel, Greenville, S. C. For other information write to members of the Committee.

L. O. MAULDIN, M.D.,
Chairman Local Committee.

Virginia State Board of Medical Examiners.

At a meeting of the State Board of Examiners held in Richmond, December 11-14, 1923, the following doctors were granted licenses to practice medicine in Virginia:

Dr. W. J. C. Agnew, Washington, D. C.
Dr. E. G. Bauersfeld, Frederick Junction, Md.
Dr. F. J. Clements, Fork Union, Va.
Dr. A. A. Creecy, Norfolk, Va.
Dr. Ernest Flehme, Philadelphia, Pa.
Dr. Geza Frank, Brooklyn, N. Y.
Dr. Emily Gardner, Richmond, Va.
Dr. J. M. Gaines, Alexandria, Va.
Dr. C. E. Hawks, Brook Hill, Va.
Dr. P. L. Hill, Gaffney, S. C.
Dr. S. P. Hileman, Richmond, Va.
Dr. C. E. Houston, Virgilina, Va.
Dr. T. D. Jones, Charlottesville, Va.
Dr. J. W. Kirk, Philadelphia, Pa.
Dr. C. A. Luck, Danville, Va.
Dr. W. B. Meares, Jr., Richmond, Va.
Dr. J. J. Olinsky, Norfolk, Va.
Dr. R. J. Neff, Charlottesville, Va.
Dr. C. W. Scott, Charlottesville, Va.
Dr. R. G. Waterhouse, Jr., Richmond, Va.

Dr. William F. Drewry has resigned his position as superintendent of the Central State Hospital, Petersburg, Va., and accepted the position as city manager of Petersburg. Dr. Drewry is one of the best-known psychiatrists in the country and with his experience in the practice of his profession is certain to be of great assistance to the people of Petersburg.

Sir Auckland Geddes, British ambassador at Washington, has resigned his post, due to bad health, and will not return to America. As a physician and a man interested in scientific research, he has made many friends among American physicians who will regret to note his retirement.

Sir Frederick Treves, the celebrated English surgeon, died at Lausanne, Switzerland, December 9, at the age of 70 years.

Catawba County, N. C. Medical Society held its annual election of officers Jan. 15th, and elected: President, Dr. T. C. Blackburn of Hickory, N. C.; Vice-President, Dr. Geo. W. Shipp, of Newton, N. C.; Secretary-Treasurer, Dr. W. G. Bandy, of Maiden, N. C. Delegates to State Society, Dr. H. C. Menzies and Dr. J. H. Shuford of Hickory, N. C. Alternates, Dr. W. P. Speas and Dr. G. R. Frye, of Hickory, N. C. Next regular meeting will be held at Hickory, N. C., March 11th, 1924, at 2 p. m.

Resolutions

Whereas, the regular medical profession has always stood for the best interests of the public whom we serve, and

Whereas, the public looks to the regular medical profession for guidance in matters pertaining to their lives and health, and

Whereas, we believe that chiropractic is without scientific basis and a menace to the public health, and

Whereas, we believe that the passage of the so-called Model Chiropractic Bill, which no doubt will be introduced at the next session of the General Assembly of South Carolina, will turn loose upon the public numbers of improperly trained persons, now therefore

Be It Resolved, by the Marlboro County Medical Society in regular meeting assembled on December 6th, 1923, that we go on record as opposed to the passage of the so-called Model Chiropractic Bill, and that a copy of these resolutions be sent to the Senator and Representatives from Marlboro County, the Committee on Legislation of the South Carolina Medical Association, the President of the South Carolina Medical Association, and to the Journal of the South Carolina Medical Association.

Signed—

Marlboro County Medical Society.

D. D. Strauss, M.D.

Douglas Jennings, Jr., M.D.,

Committee.

Dr. T. C. Johnson, Lumberton, N. C., has leased the Thompson Hospital at that place and will continue its operation. He has had charge of the institution since the death of Dr. N. A. Thompson in the fall of 1922. He has practiced medicine in Lumberton for the past 16 years.

Dr. Chas. O. DeLaney, Gastonia, N. C., announces the removal of his offices for the practice of Genito-Urinary Surgery, to the Third National Bank Building.

The South Carolina Medical Association will hold its annual meeting at Orangeburg, April 15-17, 1924. Dr. J. C. Bloodgood, of Johns Hopkins, will deliver the address on Surgery. When the program is completed other eminent names will be added and the meeting promises to be more successful than any preceding one.

Prof. E. E. Murphy, of the Medical Department of the University of Georgia, gave an intensely interesting talk on "The Progress of Medicine in the Past Twenty-five Years," at the meeting of the Anderson County Medical Society January 11. The meeting was a very helpful and inspiring one. Dr. G. S. Clinkscales is president and Dr. Lee Milford, secretary of the society.

The Oconee County Medical Society met in the Town Hall at Walhalla, S. C., 4 p. m., Jan. 2, 1924. The minutes of previous meeting were read and approved. This meeting being for the election of officers and delegates the following were duly elected: Dr. W. C. Mayes of Fair Play, President; Dr. J. D. Verner of Walhalla, Vice President; Dr. E. A. Hines of Seneca, Secretary-Treasurer.

Dr. Geo. B. Harrison, Fredericksburg, Va., and Miss Florence Kimbrough Jackson, Lynchburg, Va., were married Dec. 15.

Dr. G. R. Faircloth, Williamsville, Va., is at Johns Hopkins Hospital, studying Urology and expects to specialize in that branch of medicine.

Publications Received

Practical Chemical Analysis of Blood, by Victor C. Myers, M.A., Ph.D., Professor and Director of the Department of Biochemistry, New York Post Graduate Medical School and Hospital. Second Edition, 232 pages, illustrated. C. V. Mosby Company, St. Louis, \$4.50.

Designed as a brief survey of the subject for physicians and laboratory workers. The work is in reality a compilation of a series of articles published by the author in 1920 in the *Journal of Laboratory and Clinical Medicine*. This was revised and published in book form in 1921 and again after the exhaustion of this first edition it has been revised and the second edition published.

The author discusses briefly but concisely the chemical blood determinations which have been found of definite value in diagnosis and treatment. The book is useful in indicating why, and how, certain chemical blood analyses should be made.

Hernia, Its Anatomy, Etiology, Symptoms, Diagnosis, Prognosis and Operative Treatment, by Leigh F. Watson, M.D., associate in Surgery, Rush Medical College, 660 pages, 232 illustrations. C. V. Mosby Co., St. Louis, \$11.00.

In this volume the subject of Hernia has been most thoroughly covered and clearly discussed.

The author devotes somewhat more space than is usual, to the anatomy. This is very desirable in that it avoids unnecessary search through accessory works on anatomy when considering the subject. Operations which the author uses are described in detail. A very complete bibliography is furnished for those who wish to consult the original articles.

Operative Surgery. Covering the Operative Technic involved in the operations of general and special surgery. By Warren Stone Bickham, M.D., F.A.C.S., former Surgeon in charge of General Surgery, Manhattan Hospital, New York, former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In six octavo volumes totaling approximately 5400 pages with 6378 illustrations, mostly original and separate desk index volume. Now ready: Volume I, containing 850 pages with 921 illustrations. Volume II, containing 877 pages with 1008 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, \$10.00 per volume. Sold by subscription only. Index volume free.

There are many more surgeons who know how to properly carry out the decisions they reach than who know how to properly and accurately reach those decisions. It is greatly more to the surgeons credit to avoid than to perform operations, that is to arrest, or correct the lesion without, rather than through operation.

The first two volumes of this six volume set indicates that the author does not have in mind to cure only by operation, but how to operate technically, provided, and only provided operation be the distinctly indicated and wisest course.

Working on the assumption that the general surgeon must do in most cases a very great deal of work that is usually classed among the surgical specialties, except in the larger center of population, this work includes Gynecologic, Obstetric, Genito-urinary, and Orthopedic conditions, also to lesser degree, Eye Ear, Nose and Throat.

In a general way the subject matter is divided into three parts or divisions, viz: General Procedures Employed in Surgical Operations, General Operative Surgery and Special Operative Surgery. The individual chapters are planned largely upon an anatomical basis.

To a notable extent the various operations have been so named as to designate: the nature of the operative procedure, name of the part or parts to be operated upon and the name of the surgeon associated with the evolution of the operation.

Management of the Sick Infant, by Langley Porter, B.S., M.D., M.R.C.S. (Eng), L.R.C.P. (Lond.), Professor of Clinical Pediatrics, University of California Medical School, and William E. Carter, M.D., assistant in Pediatrics, and chief of Out Patient Department, University of California Medical School. Second Edition, 659 pages, illustrated. C. V. Mosby Company, St. Louis. \$8.50.

The authors have codified the things which they have found helpful to them in dealing with sick babies and have covered the field of medicine which deals exclusively with the peculiarities of disease as it occurs in infants.

The book is well written, practical and inclusive.

Geriatrics, a Treatise on the Prevention and Treatment of Diseases of Old Age and the care of the Aged, by Malford W. Thewlis, M.D., Editor Medical Review of Reviews, associate Editor, The Therapeutic and Dietetic Age. Second Edition, Revised. 400 pages. C. V. Mosby & Co., St. Louis, \$4.50.

This volume is really a series of monographs and a clinical discussion of cases. It is rather a presentation of the personal views of the author, than a compilation of statistical data.

Old age is not a matter determined by calendar years and the domain of Geriatrics begins at any age when senile changes take place. With the beginning of senility there begins another era in which there is as much difference from normal as there is in infancy and childhood. Geriatrics is as truly a specialty as is Pediatrics.

Dr. Abraham Jacobi, who was among the first to contend for a special branch of Pediatrics about 60 years ago, has written the introduction for this volume and contends for a special branch of Geriatrics.

Genitourinary Diseases and Syphilis, by Henry H. Morton, M.D., F.A.C.S., Professor of Genito-urinary Disease and Syphilis in the Long Island College Hospital. Fifth Edition, 712 pages, 328 illustrations, 38 full page colored plates. Physicians and Surgeons Book Company, 353 W. 59th St., New York.

Chapters have been contributed by Dr. Archibald Murray, Dr. Carl H. Laws, Dr. Alfred L. L. Bell, Dr. Alfred Potter, Dr. Louis C. Johnson, and Dr. Albert M. Judd. This is the Fifth Edition of a work that has earned much popularity. A book that is well worth studying.

Selected Essays on Orthopaedic Surgery, by Newton Melman Shaffer, M.D., Emeritus Professor of Orthopaedic Surgery, Cornell University Medical College, etc., 636 pages illustrated. G. P. Putnam's Sons, New York and London, \$5.00.

The essays and lectures which combine to make this volume are reproduced as they appeared when originally published, the first dating back to 1877.

The book thus presents the process of evolution of orthopedics in unbroken chain, and gives a clear picture of the why of present day technique.

Fighting Foes Too Small to See, by Joseph McPharlan, M.D., Sc.D., Professor of Pathology in the Medical Department of the University of Pennsylvania, 309 pages, 64 engravings. F. A. Davis Co., Philadelphia. \$2.50.

This book had its inception in a series of four lectures, delivered at the Wagner Free Institute of Science of Philadelphia, in Jan and Feb. 1921. While these lectures were to be popular yet scientific accuracy was not to be sacrificed for popularity. The result was that they were both popular and scientifically accurate. The notes of these lectures were later amplified into the present volume, making a book which is at once easily readable and scientific.

Intranasal Surgery, by Fred J. Pratt, M.D., F.A.C.S., and John A. Pratt, M.D., F.A.C.S. 334 pages, 195 half-tone engravings. F. A. Davis Co., Philadelphia, \$5.00.

The book is clearly and concisely written

and in describing operations each step has not only been described but the reason has also been given for doing it that particular way. This is then reinforced by illustrations.

Intravenous Therapy, by Walton Forest Dutton, M.D., Medical Director Polyclinic and Medico-Chirurgical Hospitals, Graduate School of Medicine, University of Pennsylvania. 542 pages, illustrated. Price \$5.50. F. A. Davis Co., Philadelphia.

The title of this work is made to include all therapeutic efforts brought to bear directly on the blood stream, and embraces venesection transfusion of whole or modified blood, and the introduction of saline or other tonic solutions into the circulation, as well as medication by the intravenous route.

The Medical Clinics of North American (issued serially, one number every other month.) Volume VII Number IV, January, 1924. (University of Kansas Number.) Octavo of 313 pages with 66 illustrations. Per clinic year (July 1923 to May 1924.) Paper \$12.00. Cloth \$16.00 net. Philadelphia and London: W. B. Saunders Company.

An Outline of Radium and Its Emanations, by the National Radium Products Co., 280 Madison Ave., New York. Price \$1.00.

Not the ideas of any one man but a review of the subject of the Internal Therapy of Radium by quotations from standard texts and authorities throughout the world. It is a brief and convenient digest of the scientific literature to date.

The Medical Clinics of North American (Issued Serially, one number every other month.) Volume VII Number III, November, 1923. (Boston Number.) Octavo of 421 pages and 66 illustration. Per clinic year (July, 1923, to May, 1924.) Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

Diagnostic Methods, a guide for history taking physical examination and laboratory tests for students and practicing physicians, by Herbert Thomas Brooks, A.B., M.D., F.A.C.P. Fourth edition. C. V. Mosley Co., St. Louis. Price \$1.75.

Exactly what its name implies—a guide—and if used as a guide certainly no steps will be omitted which would aid in reaching a definite diagnosis. Well worth having and studying.

International Clinics, a quarterly of illustrated clinical lectures and especially prepared original articles, by leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M. M.D., Philadelphia. Vol. IV, Thirty-third series, 1923. J. B. Lippincott Co., Philadelphia.

Annual Report of the Surgeon General of the Public Health Service for 1923.

Roster of Officers of the Tri-State Medical Association from Organization in 1898 to Date

(In response to a call, a temporary organization was effected at Virginia Beach, Va., August 31, 1898, with Dr. W. H. Cobb, President; Dr. Paulus A. Irving, Secretary, and Dr. H. H. Dodson, Treasurer.)

Year	Place of Meeting	President	Vice-President	Secretary-Treasurer
1-1899	Charlotte, N. C.----	*W. H. H. Cobb, Goldsboro, N. C.----	-----	P. A. Irving, Richmond, Va., Secretary H. H. Dodson, Greensboro, N. C., Treasurer
2-1900	Charleston, S. C.----	*W. H. Cobb, Goldsboro, N. C.----	H. B. Weaver, Asheville, N. C.----- C. W. Kollock, Charleston, S. C.----- *W. L. Robinson, Danville, Va.-----	Paulus A. Irving, Richmond, Va.
3-1901	Richmond, Va.-----	C. W. Kollock, Charleston, S. C.-----	H. A. Royster, Raleigh, N. C.----- Manning Simons, Charleston, S. C.----- *John R. Gildersleeve, Tazewell, Va.-----	J. N. Upshur, Richmond, Va.
4-1902	Asheville, N. C.-----	J. N. Upshur, Richmond, Va.-----	John W. Long, Greensboro, N. C.----- S. C. Baker, Sumter, S. C.----- *Hugh M. Taylor, Richmond, Va.-----	H. A. Royster, Raleigh, N. C.
5-1903	Columbia, S. C.-----	*J. A. Burroughs, Asheville, N. C.-----	David A. Stanton, High Point, N. C.----- *A. B. Knowlton, Columbia, S. C.----- Stuart McGuire, Richmond, Va.-----	Rolfe E. Hughes, Laurens, S. C.
6-1904	Danville, Va.-----	Davis Furman, Greenville, S. C.----	*J. H. March, Fayetteville, N. C.----- J. M. Fladger, Spartanburg, S. C.----- William F. Drewry, Petersburg, Va.-----	Rolfe E. Hughes, Laurens, S. C.
7-1905	Greensboro, N. C.----	*W. L. Robinson, Danville, Va.-----	H. A. Royster, Raleigh, N. C.----- Gaston DeFoix Wilson, Spartanburg, S. C.----- Southgate Leigh, Norfolk, Va.-----	Rolfe E. Hughes, Laurens, S. C.
8-1906	White Stone, S. C.----	H. A. Royster, Raleigh, N. C.-----	Albert Anderson, Raleigh, N. C.----- J. W. Jerry, Greenville, S. C.----- *Hugh M. Taylor, Richmond, Va.-----	Rolfe E. Hughes, Laurens, S. C.
9-1907	Norfolk, Va.-----	Rolfe E. Hughes, Laurens, S. C.----	*I. M. Taylor, Morganton, N. C.----- J. A. Hayne, Greenville, S. C.----- W. E. Driver, Norfolk, Va.-----	J. Howell Way, Waynesville, N. C.
10-1908	Charlotte, N. C.-----	Stuart McGuire, Richmond, Va.-----	Southgate Leigh, Norfolk, Va.----- *Edward C. Register, Charlotte, N. C.----- Charles M. Rees, Charleston, S. C.-----	J. Howell Way, Waynesville, N. C.
11-1909	Charleston, S. C.----	Albert Anderson, Raleigh, N. C.----	Robert C. Bryan, Richmond, Va.----- J. Edward Stokes, Salisbury, N. C.----- W. P. Timmerman, Batesburg, S. C.-----	J. Howell Way, Waynesville, N. C.
12-1910	Richmond, Va.-----	LeGrand Guerrey, Columbia, S. C.----	Joseph A. White, Richmond, Va.----- William W. McKenzie, Salisbury, N. C.----- J. Wilkinson Jervey, Greenville, S. C.-----	J. Howell Way, Waynesville, N. C.

*Deceased.

Year	Place of Meeting	President	Vice-President	Secretary-Treasurer
13-1911	Raleigh, N. C.-----	Joseph A. White, Richmond, Va.---	Joseph Graham, Durham, N. C.----- *T. Prioleau Whaley, Charleston, S. C.--- Samuel Lille, Lynchburg, Va.-----	J. Howell Way, Waynesville, N. C.
14-1912	Columbia, S. C.-----	J. Howell Way, Waynesville, N. C.	W. E. Anderson, Farmville, Va.----- Thos. E. Anderson, Statesville, N. C.--- Frank H. McLeod, Florence, S. C.-----	Rolfe E. Hughes, Laurens, S. C.
15-1913	Norfolk, Va.-----	A. E. Baker, Charleston, S. C.-----	A. L. Gray, Richmond, Va.----- A. J. Crowell, Charlotte, N. C.----- *A. B. Knowlton, Columbia, S. C.-----	Rolfe E. Hughes, Laurens, S. C.
16-1914	Wilmington, N. C.---	Southgate Leigh, Norfolk, Va.-----	Stephen Harnsberger, Catlett, Va.----- *E. Reid Russell, Asheville, N. C.----- J. H. Taylor, Columbia, S. C.-----	Rolfe E. Hughes, Laurens, S. C.
17-1915	Charleston, S. C.---	*E. C. Register, Charlotte, N. C.---	J. Allison Hodges, Richmond, Va.----- *Charles T. Harper, Wilmington, N. C.--- F. H. McLeod, Florence, S. C.-----	Rolfe E. Hughes, Laurens, S. C.
18-1916	Richmond, Va.-----	Jas. H. McIntosh, Columbia, S. C.---	Carl V. Reynolds, Asheville, N. C.----- Beverly R. Tucker, Richmond, Va.----- G. Augustus Neuffer, Abbeville, S. C.---	Rolfe E. Hughes, Laurens, S. C.
19-1917	Durham, N. C.-----	J. Allison Hodges, Richmond, Va.---	James K. Hall, Richmond, Va.----- Addison G. Brenizer, Charlotte, N. C.---	Rolfe E. Hughes, Laurens, S. C.
20-1918	Charleston, S. C.---	D. T. Tayloe, Washington, N. C.---	J. R. Young, Anderson, S. C.----- James K. Hall, Richmond, Va.----- Addison G. Brenizer, Charlotte, N. C.---	Rolfe E. Hughes, Laurens, S. C.
21-1919	Richmond, Va.-----	R. S. Cathcart, Charleston, S. C.---	Douglas Vanderhoof, Richmond, Va.----- L. A. Crowell, Lincolnton, N. C.----- Francis A. Coward, Columbia, S. C.---	Rolfe E. Hughes, Laurens, S. C.
22-1920	Charlotte, N. C.-----	Robert C. Bryan, Richmond, Va.---	C. M. Miller, Richmond, Va.----- A. J. Crowell, Charlotte, N. C.----- A. K. Taft, Charleston, S. C.-----	Rolfe E. Hughes, Laurens, S. C.
23-1921	Spartanburg, S. C.	J. P. Munroe, Charlotte, N. C.-----	H. S. Hedges, Charlottesville, Va.----- J. A. Williams, Greensboro, N. C.----- W. W. Fennell, Rock Hill, S. C.-----	James K. Hall, Richmond, Va.
24-1922	Norfolk, Va.-----	W. W. Fennell, Rock Hill, S. C.---	Karl S. Blackwell, Richmond, Va.----- J. T. Burrus, High Point, N. C.----- H. R. Black, Spartanburg, S. C.-----	James K. Hall, Richmond, Va.
25-1923	High Point, N. C.---	S. S. Gale, Roanoke, Va.-----	W. E. Driver, Norfolk, Va.----- I. P. Battle, Rocky Mount, N. C.----- *R. B. Epting, Greenwood, S. C.-----	James K. Hall, Richmond, Va.
26-1924	Greenville, S. C.---	Chas. O'H. Laughinghouse, Greenville, N. C.-----	W. L. Peple, Richmond, Va.----- D. A. Stanton, High Point, N. C.----- S. B. Sherard, Gafney, S. C.-----	James K. Hall, Richmond, Va.

*Deceased.

NON RESIDENT MEMBERS TRI-STATE MEDICAL ASSOCIATION.

Alford, Alex. E. B.	Bainbridge, Ga.	Harrell, D. L.	Suffolk, Va.
Doughty, W. H., Jr.	Augusta, Ga.	Harrison, V. W.	Richmond, Va.
Hoke, Michael	Atlanta, Ga.	Hazen, Charles M.	Bon Air, Va.
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Hagner, F. R.	Washington, D. C.	Henderson, Estell H.	Marion, Va.
Shands, A. R.	Washington, D. C.	Henson, James W.	Richmond, Va.
White, Chas. S.	Washington, D. C.	Hill, Edwin G.	Richmond, Va.
Williams, Tom	Washington, D. C.	Hill, Emory	Richmond, Va.
Irwin, Hamner C., 1st Nat. Bank Bldg.,	Pocatello, Idaho	Hodges, Fred M.	Richmond, Va.
Hamlin, P. G., Episcopal Hospital,	Philadelphia, Pa.	Hodges, J. Allison	Richmond, Va.
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Summers, Chas. L.	Baltimore, Md.	Horsley, J. S.	Richmond, Va.
Price, Susan A., State Hospital,	Watson, West Virginia	Howle, Paul W.	Richmond, Va.
Sharpe, William (Honorary) New York, N. Y.		Hughes, T. E.	Richmond, Va.
		Hughes, T. J.	Roanoke, Va.
		Hunter, James W., Jr.	Norfolk, Va.
		Hutcheson, J. M.	Richmond, Va.
		Hutton, Thomas D.	Glade Spring, Va.
		Jameson, Waller	Roanoke, Va.
		Johns, Frank S.	Richmond, Va.
		Johnson, Marcellus, A., Jr.	Roanoke, Va.
		Johnston, H. G.	Pearisburg, Va.
		Jones, A. P.	Roanoke, Va.
		King, J. C.	Radford, Va.
		Leigh, Southgate	Norfolk, Va.
		Lewis, Charles H.	Richmond, Va.
		McGavock, E. P.	Richmond, Va.
		McGuire, Stuart	Richmond, Va.
		McKinney, Joseph T.	Roanoke, Va.
		Mann, Edwin M.	Kenbridge, Va.
		Mapp, Joseph B.	Coeburn, Va.
		Mason, H. N.	Richmond, Va.
		Mauck, H. Page	Richmond, Va.
		Maxwell, George M.	Roanoke, Va.
		Michaux, Stuart	Richmond, Va.
		Miller, C. M.	Richmond, Va.
		Miller, James W.	Pembroke, Va.
		Miller, James McT.	Crockett, Va.
		Mitchell, Robert E.	Richmond, Va.
		Morrison, James	Lynchburg, Va.
		Nelson, J. A.	Richmond, Va.
		Noblin, J. G.	East Radford, Va.
		Nuckols, M. E.	Richmond, Va.
		Oglesby, K. P.	Max Meadows, Va.
		Payne, R. L.	Norfolk, Va.
		Peple, W. L.	Richmond, Va.
		Peters, Don Preston	Lynchburg, Va.
		Peyton, Chas. E. C.	Pulaski, Va.
		Powell, W. L.	Roanoke, Va.
		Preston, Robert S.	Richmond, Va.
		Price, L. T.	Richmond, Va.
		Rapp, John M.	Roanoke, Va.
		Rawls, J. E.	Suffolk, Va.
		Rawls, J. L.	Suffolk, Va.
		Righter, Frank P.	Richmond, Va.
		Rinker, F. C.	Norfolk, Va.
		Robertson, L. A.	Danville, Va.
		Robertson, W. W.	Danville, Va.
		Robins, Charles R.	Richmond, Va.
		Rogers, Wm. R.	Bristol, Va.
		Royster, James H.	Richmond, Va.
		Rucker, M. P.	Richmond, Va.
		Shepherd, W. A.	Richmond, Va.
		Sherrill, Z. V.	Marion, Va.
		Showalter, A. M.	Cambria, Va.
		Smith, Dudley C.	University, Va.
		Smith, Frank H.	Abingdon, Va.
		Smith, James H.	Richmond, Va.
		Spencer, H. B.	Lynchburg, Va.
		Stephens, Albert C.	Barren Springs, Va.
		Strickland, J. A.	Norfolk, Va.
		Strickland, J. T.	Roanoke, Va.
		Surratt, Isaac W.	Belspring, Va.
		Taliaferro, R. M.	Lynchburg, Va.
		Talley, D. D., Jr.	Richmond, Va.
		Terrell, E. H.	Richmond, Va.
		Tucker, B. R.	Richmond, Va.

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Baughman, Greer	Richmond, Va.
Bear, Joseph	Richmond, Va.
Belt, H. S.	South Boston, Va.
Blackwell, Karl S.	Richmond, Va.
Boyd, John O.	Roanoke, Va.
Brown, George W.	Williamsburg, Va.
Brown, Alex G., Jr.	Richmond, Va.
Bryan, Robt. C.	Richmond, Va.
Buck, W. W.	Rural Retreat, Va.
Budd, Sam W.	Richmond, Va.
Burke, M. O.	Richmond, Va.
Buxton, J. T.	Newport News, Va.
Byrd, C. B.	Norfolk, Va.
Call, Manfred	Richmond, Va.
Carleton, Benjamin L.	Newport News, Va.
Carrington, C. V.	Richmond, Va.
Carter, Wade H.	East Radford, Va.
Chaffin, W. W.	Pulaski, Va.
Chitwood, E. M.	Wytheville, Va.
Coleman, C. C.	Richmond, Va.
Cosby, L. F.	Abingdon, Va.
Culpepper, James H.	Norfolk, Va.
Darden, O. B.	Richmond, Va.
Davis, J. S.	University, Va.
Davis, J. W.	Lynchburg, Va.
Davis, Paul	Roanoke, Va.
Dillard, J. W.	Lynchburg, Va.
Drewry, W. F.	Petersburg, Va.
Driver, W. E.	Norfolk, Va.
DuBose, R. H.	Roanoke, Va.
Dunn, John	Richmond, Va.
Ennett, N. Thomas	Richmond, Va.
Fowlkes, C. H.	Richmond, Va.
Fuqua, W. B.	Radford, Va.
Gale, S. S.	Roanoke, Va.
Gayle, R. F., Jr.	Richmond, Va.
Geisinger, Joseph F.	Richmond, Va.
Giesen, J. J.	Radford, Va.
Gill, W. W.	Richmond, Va.
Glasser, Robert D.	Norfolk, Va.
Goodwin, William H.	University, Va.
Graves, K. D.	Roanoke, Va.
Graves, S. H.	Norfolk, Va.
Gray, A. L.	Richmond, Va.
Griffin, C. F.	Suffolk, Va.
Grigg, W. F.	Richmond, Va.
Hall, George C.	Richmond, Va.
Hall, James K.	Richmond, Va.
Hamner, J. L.	Mannboro, Va.
Harnsberger, S.	Warrenton, Va.

Turman, A. E.	Richmond, Va.	Hartsell, Jos. A.	Concord, N. C.
Upshur, J. N.	Richmond, Va.	Highsmith, J. F.	Fayetteville, N. C.
Vanderhoof, Douglas	Richmond, Va.	Highsmith, Seavy	Fayetteville, N. C.
Vaughan, Warren T.	Richmond, Va.	Hockette, L. E.	Charlotte, N. C.
Watson, E. E.	Salem, Va.	Holt, Wm. P.	Duke, N. C.
Watts, S. H.	University, Va.	Houser, O. J.	Charlotte, N. C.
Weindel, W. J.	Marion, Va.	James, W. D.	Hamlet, N. C.
Wescott, H. H.	Melfa, Va.	Jennings, R. J.	Winston-Salem, N. C.
White, Joseph A.	Richmond, Va.	Johnson, Bayard C.	Bunn, N. C.
Whitman, William R.	Roanoke, Va.	Justice, Zora K.	Davidson, N. C.
Wiley, R. M.	Salem, Va.	Kapp, Henry H.	Winston-Salem, N. C.
Williams, Carrington	Richmond, Va.	Kennedy, John P.	Charlotte, N. C.
Williams, L. L., Jr.	Richmond, Va.	Laughinghouse, C. O'H.	Greenville, N. C.
Williams, William R.	Richmond, Va.	Lawrence, Chas. S.	Winston-Salem, N. C.
Willis, Murat	Richmond, Va.	Livingston, E. A.	Gibson, N. C.
Wilson, Franklin D.	Norfolk, Va.	Long, Glenn	Newton, N. C.
Woolling, R. M.	Pulaski, Va.	Long, J. W.	Greensboro, N. C.
Wright, George A.	Abingdon, Va.	Love, Bedford E.	Roxboro, N. C.
Wright, R. H.	Richmond, Va.	Mann, I. T.	High Point, N. C.
		Marriott, H. B.	Battleboro, N. C.
		Martin, M. S.	Mount Airy, N. C.
		Matheson, J. P.	Charlotte, N. C.
		Miller, O. L.	Gastonia, N. C.
		Mills, C. H. C.	Charlotte, N. C.
		Montgomery, Harry M.	Burlington, N. C.
		Moore, Alex W.	Charlotte, N. C.
		Mosely, H. P.	Farmville, N. C.
		Monroe, J. P.	Sanford, N. C.
		Munroe, J. P.	Charlotte, N. C.
		Myers, Alonzo	Charlotte, N. C.
		McClelland, Jos. O.	Maxton, N. C.
		McCampbell, John	Morganton, N. C.
		McConnell, John W.	Davidson, N. C.
		McDaniel, L. E.	Lasker, N. C.
		McGehee, J. W.	Reidsville, N. C.
		McKay, Hamilton W.	Charlotte, N. C.
		McLeod, G. G.	Carthage, N. C.
		McNairy, C. Banks	Kinston, N. C.
		McNairy, Caroline	Lenoir, N. C.
		MacNider, Wm. deB.	Chapel Hill, N. C.
		McPherson, Chas. W.	Burlington, N. C.
		McPherson, S. D.	Durham, N. C.
		Nalle, Brodie C.	Charlotte, N. C.
		Nisbet, W. O.	Charlotte, N. C.
		Noble, R. P.	Raleigh, N. C.
		Noell, R. H.	Rocky Mount, N. C.
		Norris, Henry	Rutherfordton, N. C.
		Orr, Chas. C.	Asheville, N. C.
		Parker, J. R.	Burlington, N. C.
		Pepper, J. K.	Winston-Salem, N. C.
		Perry, H. G.	Louisburg, N. C.
		Person, Jas. B.	Salem, N. C.
		Pittman, R. L.	Fayetteville, N. C.
		Pritchard, A. T.	Asheville, N. C.
		Proctor, Ivan M.	Raleigh, N. C.
		Quillen, E. B.	Rocky Mount, N. C.
		Ray, John B.	Leaksville, N. C.
		Roberson, Foy	Durham, N. C.
		Sawyer, C. J.	Winston-Salem, N. C.
		Shirley, H. C.	Charlotte, N. C.
		Sikes, G. T.	Creedmore, N. C.
		Shore, C. A.	Raleigh, N. C.
		Sloan, David B.	Wilmington, N. C.
		Sloan, Henry L.	Charlotte, N. C.
		Small, Victor R.	Raleigh, N. C.
		Smith, Owen	High Point, N. C.
		Smith, O. F.	Scotland Neck, N. C.
		Smith, C. T.	Rocky Mount, N. C.
		Sparrow, Thos D.	Charlotte, N. C.
		Spencer, W. O.	Winston-Salem, N. C.
		Spicer, R. W.	Goldsboro, N. C.
		Squires, Claude B.	Charlotte, N. C.
		Stanton, D. A.	High Point, N. C.
		Stevens, M. L.	Asheville, N. C.
		Stokes, J. E.	Salisbury, N. C.
		Street, M. Eugene	Glendon, N. C.
		Taylor, David T.	Washington, N. C.

NORTH CAROLINA MEMBERS TRI-STATE MEDICAL ASSOCIATION

Abernethy, C. O.	Raleigh, N. C.		
Allan, William	Charlotte, N. C.		
Allgood, R. A.	Fayetteville, N. C.		
Ambler, C. P.	Asheville, N. C.		
Anders, McTyeire G.	Gastonia, N. C.		
Anderson, Albert	Raleigh, N. C.		
Anderson, Jas. A.	Gastonia, N. C.		
Anderson, Thos. E.	Statesville, N. C.		
Archer, Isaac J.	Asheville, N. C.		
Ashworth, W. C.	Greensboro, N. C.		
Averitt, Kirby C.	Fayetteville, N. C.		
Barron, A. A.	Charlotte, N. C.		
Battle, I. P.	Rocky Mount, N. C.		
Beall, L. G.	Black Mountain, N. C.		
Beam, Hugh M.	Wood, N. C.		
Biggs, M. H.	Rutherfordton, N. C.		
Bisch, Louis E.	Asheville, N. C.		
Blair, A. McNeil	Southern Pines, N. C.		
Boice, E. S.	Rocky Mount, N. C.		
Bonner, O. B.	High Point, N. C.		
Bost, Thos. C.	Charlotte, N. C.		
Brenizer, Addison G.	Charlotte, N. C.		
Brooks, G. M.	Elm City, N. C.		
Brooks, R. E.	Burlington, N. C.		
Bulla, Mora S.	Elizabeth City, N. C.		
Bullock, T. C.	Asheville, N. C.		
Burrus, J. T.	High Point, N. C.		
Burt, S. P.	Louisburg, N. C.		
Carroll, John D.	Hookton, N. C.		
Carroll, R. S.	Asheville, N. C.		
Coppridge, Wm. M.	Durham, N. C.		
Croom, G. H.	Wilmington, N. C.		
Crowell, A. J.	Charlotte, N. C.		
Crowell, L. A.	Lincolnton, N. C.		
Davis, James W.	Statesville, N. C.		
Dawson, W. W.	Grifton, N. C.		
Deans, A. W.	Battleboro, N. C.		
Dixon, Guy E.	Hendersonville, N. C.		
Dixon, W. H.	Ayden, N. C.		
Dunn, W. L.	Asheville, N. C.		
Edwards, B. O.	Asheville, N. C.		
Elliott, W. F.	Lincolnton, N. C.		
Flack, Roswell E.	Asheville, N. C.		
Fleming, M. I.	Rocky Mount, N. C.		
Foster, John F.	Sanford, N. C.		
Gamble, J. R.	Lincolnton, N. C.		
Garrison, D. A.	Gastonia, N. C.		
Gayle, E. M.	Morganton, N. C.		
Gibbon, J. W.	Charlotte, N. C.		
Glenn, Eugene B.	Asheville, N. C.		
Greene, Thos. M.	Wilmington, N. C.		
Griffin, W. Ray	Asheville, N. C.		
Halford, J. W.	Lillington, N. C.		
Harper, J. H.	Snow Hill, N. C.		

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Taylor, Wm. L.	Stovall, N. C.	Harmon, S. E.	Columbia, S. C.
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Thompson, S. R.	Charlotte, N. C.	Houseal, W. G.	Newberry, S. C.
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Townsend, M. L.	Charlotte, N. C.	Jefferies, J. L.	Spartanburg, S. C.
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Vann, J. R.	Fayetteville, N. C.	Jordan, Fletcher	Greenville, S. C.
Walters, Chas. M.	Burlington, N. C.	Kinney, John F.	Bennettsville, S. C.
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Willis, B. C.	Rocky Mount, N. C.	Mauldin, L. O.	Greenville, S. C.
Woodard, G. B.	Kenly, N. C.	May, Chas. R.	Bennettsville, S. C.
Worthington, F. C.	Charlotte, N. C.	Miller, J. H.	Cross Hill, S. C.

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Baker, A. E.	Charleston, S. C.	Neely, A. T.	Fort Mill, S. C.
Baker, A. E., Jr.	Charleston, S. C.	Neuffer, G. A.	Abbeville, S. C.
Barron, C. W.	Columbia, S. C.	Palmer, M. C.	Spartanburg, S. C.
Barron, W. R.	Columbia, S. C.	Pressly, E. W.	Greenville, S. C.
Baynard, E. C.	Charleston, S. C.	Pressly, W. L.	Due West, S. C.
Benet, George	Columbia, S. C.	Rakestraw, C. M.	Chester, S. C.
Bennett, O. C.	Spartanburg, S. C.	Reeves, T. B.	Greenville, S. C.
Black, H. R.	Spartanburg, S. C.	Rhame, J. Sumter	Charleston, S. C.
Black, S. O.	Spartanburg, S. C.	Rigby, Cecil	Spartanburg, S. C.
Blackmon, W. R.	Rock Hill, S. C.	Seibels, Robert E.	Columbia, S. C.
Bolt, J. L.	Easley, S. C.	Shaw, H. L.	Sumter, S. C.
Brackett, Wm. E.	Whitmire, S. C.	Strait, W. F.	Rock Hill, S. C.
Brailsford, A. M.	Mullins, S. C.	Sherard, S. Baskin	Gaffney, S. C.
Lunch, G. H.	Columbia, S. C.	Simpson, W. E.	Rock Hill, S. C.
Carpenter, E. W.	Greenville, S. C.	Smith, D. L.	Spartanburg, S. C.
Cash, J. B.	Chesnee, S. C.	Smith, W. A.	Charleston, S. C.
Cernon, Jos. Henry	Charleston, S. C.	Smith, Zack G.	Marion, S. C.
Cathcart, R. S.	Charleston, S. C.	Smith, Herbert	Glenn Springs, S. C.
Chamberlain, O. B.	Charleston, S. C.	Steadly, B. B.	Spartanburg, S. C.
Chambers, Mack W.	Spartanburg, S. C.	Stuart, Gordon C.	Eastover, S. C.
Claytor, Hubert	Hopkins, S. C.	Stuckey, H. M.	Sumter, S. C.
Copeland, J. L.	Ehrhardt, S. C.	Taft, A. R.	Charleston, S. C.
Correll, W. P.	Columbia, S. C.	Taylor, J. H.	Columbia, S. C.
Crook, Martin	Spartanburg, S. C.	Thompson, Geo. E.	Inman, S. C.
Crossland, W. J.	Bennettsville, S. C.	Timmerman, W. P.	Batesburg, S. C.
Curry, James W.	Greenville, S. C.	Tyler, G. T.	Greenville, S. C.
Davis, T. McC.	Greenville, S. C.	Walker, C. M.	Westminster, S. C.
Doyle, E. C.	Seneca, S. C.	Walker, R. R.	Laurens, S. C.
Edgerton, N. Bruce	Columbia, S. C.	Wallace, Wm. R.	Chester, S. C.
Earle, C. B.	Greenville, S. C.	Ward, J. LaBruce	Columbia, S. C.
Fennell, W. W.	Rock Hill, S. C.	Ward, W. B.	Rock Hill, S. C.
Ferguson, W. D.	Laurens, S. C.	Way, W. B.	Ridgeville, S. C.
Fike, Rupert H.	Spartanburg, S. C.	Weinberg, Milton	Sumter, S. C.
Finger, Jas. Avery	Charleston, S. C.	Whaley, E. Mikell	Columbia, S. C.
Finney, Roy P.	Gaffney, S. C.	Williamson, J. W.	Hartsville, S. C.
Furman, Davis	Greenville, S. C.	Wilson, E. R.	Sumter, S. C.
		Wilson, Robert, Jr.	Charleston, S. C.
		Wyman, M. H.	Columbia, S. C.
		Zimmerman, W. T.	Spartanburg, S. C.

Twenty-Sixth Annual Session

of the TRI-STATE MEDICAL ASSOCIATION of the CAROLINAS and VIRGINIA

"Science Knows No Mysteries"

Greenville, S. C.

February, 20-21

1924.

OFFICERS—SESSION 1924.

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Dr. W. L. Peple.....Richmond, Va.

Vice-President

Dr. D. A. Stanton.....High Point, N. C.

Vice-President

Dr. S. B. Sherard.....Gaffney, S. C.

Secretary-Treasurer

Dr. James K. Hall.....Richmond, Va.

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Dr. J. T. McKinney.....Roanoke, Va.

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Dr. Geo. H. Bunch.....Columbia, S. C.

Dr. F. C. Rinker.....Norfolk, Va.

Three Year Term

Dr. F. M. Hodges.....Richmond, Va.

Dr. D. A. Stanton.....High Point, N. C.

Dr. W. R. Wallace.....Chester, S. C.

Chairman of Local Committee

Dr. L. O. Mauldin.....Greenville, S. C.

Reporter

Miss Mary Robinson.....Raleigh, N. C.

PRELIMINARY PROGRAM

Wednesday, February 20th, 10 A. M.

Place of Meeting

Imperial Hotel

The Association will be called to order by Dr. W. H. Powe, President of the Greenville County Medical Society.

The Welcome—By Dr. L. O. Mauldin, Chairman Local Committee of Arrangements and President of the State Medical Society.

President's Address—Dr. Charles O'H. Laughinghouse, Greenville, North Carolina.

PAPERS AND DISCUSSIONS

"Early Removal of Drainage in Acute, Perforative, Gangrenous Appendicitis with Peritonitis, with Analysis of One Hundred Cases," by Dr. S. S. Gale, Roanoke, Va.

"A Case of Cancer of the Transverse Colon Removed in Rather an Unusual Way," by Dr. G. H. Bunch, Columbia, S. C.

"Cyst of the Epididymis: Case Report," by Dr. Hamilton W. McKay, Charlotte, N. C.

"The Surgical Treatment of Burns Based on Clinical Experience and Experimental Observations," by Dr. A. M. Willis, Richmond, Va.

"The Management of Ureteral Calculi"—(Lantern Slides), by Dr. N. Bruce Edgerton, Columbia, S. C.

"Neurectomies (Stoeffel Operation) in the Treatment of Spastic Paralysis"—(Lantern Slides), by Dr. O. L. Miller, Charlotte, N. C.

"Preparation of Hyperthyroid Cases for Operation by Radium," by Dr. R. L. Payne, Norfolk, Va.

"A Contribution to the Pathology of Paralysis Agitans," by Dr. C. M. Byrnes, Baltimore, Md. (Invited guest).

"Diagnosis, Prognosis and Treatment in Early Pulmonary Tuberculosis," by Dr. Roswell E. Flack, Asheville, N. C.

"Why do so many Men Die between Forty and Sixty Years of Age?" by Dr. M. O. Burke, Richmond, Va.

"Some Feeding Fallacies," by Dr. Wm. P. Cornell, Columbia, S. C.

"Concerning the Significance of Stainable Lipoid (Fatty Material in the Kidney),"—(Lantern Slides), by Dr. Wm. deB. MacNider, Chapel Hill, N. C.

"A Study of One Hundred Cases of Gall Bladder Disease Operated on," by Dr. C. S. Lawrence, Winston-Salem, N. C.

"The Management of Benign Prostatic Hypertrophy, with Especial Reference to Recent Advances," by Dr. Linwood D. Keyser, Roanoke, Va.

"Medical Education," by Dr. H. W. Chase, Chapel Hill, N. C. (Invited guest.)

"The Abdominal Invalid," by Dr. Roy P. Finney, Gaffney, S. C.

"The Roentgen Ray in the Treatment of Enlarged Prostates," by Dr. F. M. Hodges, Richmond, Va.

"Pancreatic Cysts," by Dr. H. S. Black, Spartanburg, S. C.

"Chronic Appendicitis as a Cause of Acidosis in Children," by Dr. Stuart McGuire, Richmond, Va.

"Gradenigo's Syndrome," by Dr. M. R. Mobley, Florence, S. C.

"Comparative Value of Specific Gravity and Phenolsulphonaphthalein Excretion as Tests of Differential Kidney Function," by Dr. L. C. Todd and Dr. A. J. Crowell, Charlotte, N. C.

"The Plan for Medical Preparedness for National Emergency," by Major Glen I. Jones, Medical Corps, United States Army, Washington, D. C. (Invited guest.)

"Some Unusual Neck Cases"—(Lantern Slides), by Dr. Addison G. Brenizer, Charlotte, N. C.

"The Diagnosis of Failing Compensation in Valvular Heart Disease," by Dr. Garnett Nelson, Richmond, Va.

"Wassermann and Kahn Reactions," by Dr. Francis B. Johnson and Dr. W. A. L. Wellbrock, Charleston, S. C.

"Malignant Tumors of the Nasopharynx," by Dr. H. C. Shirley, Charlotte, N. C.

"Newer Methods in the Diagnosis and Treatment of Syphilis," by Dr. Warren T. Vaughan, Richmond, Va.

"The Diagnosis of Disseminated Sclerosis," by Dr. R. Finley Gayle, Jr., and Dr. Beverly R. Tucker, Richmond, Va.

"Dangerous Hemorrhage from Hyperplastic Endometritis with Report of a Case," by Dr. Robert T. Ferguson, Charlotte, N. C.

"Cleft Palate Considerations," by Dr. James W. Gibbon, Charlotte, N. C.

"Bronchial Asthma," by Dr. Lucius G. Gage, Charlotte, N. C.

"Early Diagnosis and Prevention of Mental Disease," by Dr. L. G. Beall, Black Mountain, N. C.

"Treatment of Maxillary Diseases," by Dr. John F. Townsend, Charleston, S. C.

"Cases Illustrating the Surgical Treatment of Tuberculosis of the Intestines," by Dr. Edmund S. Boice, Rocky Mount, N. C.

"Intussusception: Report of an Unusual Case," by Dr. W. L. Peple, Richmond, Va.

"Sims' Position in Gynecology," by Dr. Southgate Leigh, Norfolk, Va.

"Lumbar Pain and Its Radiations,"—(Lantern Slides), by Dr. Tom A. Williams, Washington, D. C.

"On Some Aspects of Uraemia," by Dr. J. H. Cannon, Charleston, S. C.

"The Relation Between Surgery, X-Ray Treatment and Radium," by Dr. W. P. Whittington, Asheville, N. C.

"Become Acquainted With Your Patient," by Dr. J. F. Highsmith, Fayetteville, N. C.

"Narcotic Drug Addiction Disease vs. The Narcotic Drug Habit," by Dr. W. C. Ashworth, Greensboro, N. C.

Information

The Imperial Hotel will be official headquarters of the Association. Physicians who expect to attend the meeting should ask for the reservation of a room. The Association will meet in one section, and all sessions will be held in the banquet hall of the Imperial Hotel.

Every effort has been made to induce the physicians of Greenville not to offer any entertainment. The time of the Association will be fully occupied in the discussion of medical problems. On Wednesday evening, however, at six o'clock, Dr. E. W. Carpenter will give a buffet luncheon in his home to the members of the Association and the invited guests.

The physicians of Greenville wish the members to understand that the country club and the golf course will be open to them throughout the meeting. They will need no card, but registration at the club house as members of the Tri-State will give them the privileges of the club and of the links.

The wives of visiting physicians will be entertained by the wives of members of the reception committee.

There will be sufficient time for the reading and the discussion of each paper on the program. It is hoped that the discussions may be pertinent, concise, frank, and helpful.

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A copy of each paper on the program should be given to the Secretary immediately after the paper has been read. These papers will be published in the official organ of the Association.

Section 9. "Not more than twenty minutes will be occupied in reading any paper, except by vote of the Association. In the discussion of papers, resolutions or questions, no member shall speak longer than five minutes nor more than twice on the same subject, except by special permission by vote of the Association."

Additional information may be secured by addressing any officer of the Association or Dr. L. O. Mauldin, Greenville, South Carolina, the chairman of the committee of arrangements,

The membership is reminded that the President elected at this meeting shall come from South Carolina, and that the meeting in 1925 will be held in Virginia.

Chas. O'H. Laughinghouse, M.D.,

President.

Greenville, North Carolina.

Jas. K. Hall, M.D.,

Secretary-Treasurer,

Richmond, Virginia.

WANTED Transactions of the North Carolina State Medical Society for years 1845, 1877 and 1878. Will pay liberally for same. Dr. J. W. Long, Greensboro, N. C.

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Southern Medicine and Surgery

VOL. LXXXVI

CHARLOTTE, N. C., MARCH, 1924

No. 3.

REGISTRATION AT THE MEETING OF THE TRI-STATE MEDICAL ASSOCIATION GREENVILLE, S. C., FEBRUARY 20 AND 21, 1924.

W. L. Peple	Richmond, Va.	H. M. Daniel	Anderson, S. C.
A. L. Gray	Richmond, Va.	D. J. Barton	Anderson, S. C.
Carrington Williams	Richmond, Va.	J. G. Mock	Greenville, S. C.
A. P. Jones	Roanoke, Va.	J. L. Anderson	Greenville, S. C.
Fred M. Hodges	Richmond, Va.	B. O. Edwards	Asheville, N. C.
Garnett Nelson	Richmond, Va.	J. W. DuPree	Greenville, S. C.
S. S. Gale	Roanoke, Va.	L. H. McColla	Greenville, S. C.
G. Timberlake	Greenville, S. C.	C. Q. West	Greenville, S. C.
D. H. Smith	Glenn Springs, S. C.	D. A. Garrison	Gastonia, N. C.
L. O. Mauldin	Greenville, S. C.	W. P. Cornell	Columbia, S. C.
L. D. Keyser	Roanoke, Va.	Rolfe E. Hughes	Laurens, S. C.
J. Howell Way	Waynesville, N. C.	J. M. Bearden	Laurens, S. C.
W. C. Black	Greenville, S. C.	Baxter Haynes	Spartanburg, S. C.
W. H. Powe	Greenville, S. C.	W. P. Whittington	Asheville, N. C.
Albert Anderson	Raleigh, N. C.	R. L. Pittman	Fayetteville, N. C.
C. S. Lawrence	Winston-Salem, N. C.	A. E. Baker	Charleston, S. C.
J. A. White	Richmond, Va.	F. B. Johnson	Charleston, S. C.
Hubert A. Royster	Raleigh, N. C.	R. M. Pollitzer	Charleston, S. C.
W. B. Sparkman	Greenville, S. C.	E. B. Glenn	Asheville, N. C.
C. M. Byrnes	Baltimore, Md.	Henry Norris	Rutherfordton, N. C.
Beverly R. Tucker	Richmond, Va.	R. M. Crawford	Rutherfordton, N. C.
F. T. Simpson	Westminster, S. C.	W. R. Wallace	Chester, S. C.
T. G. Hall	Westminster, S. C.	M. A. Griffin	Asheville, N. C.
M. W. Webb	Wagenen, S. C.	H. D. Wolfe	Greenville, S. C.
H. F. Starr	Greensboro, N. C.	H. Stokes Munroe	Charlotte, N. C.
O. L. Miller	Gastonia, N. C.	W. L. Pressley	Due West, S. C.
Hugh Smith	Greenville, S. C.	R. C. Sample	Hendersonville, N. C.
E. W. Carpenter	Greenville, S. C.	L. G. Beall	Black Mountain, N. C.
C. O. DeLaney	Gastonia, N. C.	C. B. Earle	Greenville, S. C.
B. Weathers	Gastonia, N. C.	A. C. Owings	Greenville, S. C.
T. M. Davis	Greenville, S. C.	C. T. J. Giles	Greenville, S. C.
M. L. Townsend	Charlotte, N. C.	A. R. Fike	Spartanburg, S. C.
Wm. deB. MacNider	Chapel Hill, N. C.	F. S. Westmoreland	Spartanburg, S. C.
James W. Vernon	Morganton, N. C.	W. P. Timmerman	Batesburg, S. C.
Thos. E. Anderson	Statesville, N. C.	A. E. Brown	Greenville, S. C.
Davis Furman	Greenville, S. C.	C. D. L. Smith	Spartanburg, S. C.
Geo. H. Bunch	Columbia, S. C.	Geo. R. Wilkinson	Greenville, S. C.
M. H. Wyman	Columbia, S. C.	Geo. E. Thompson	Inman, S. C.
J. Richard Allison	Columbia, S. C.	C. B. F. Goodlett	Traveler's Rest, S. C.
N. Bruce Edgerton	Columbia, S. C.	Tom A. Williams	Washington, D. C.
W. A. Tripp	Easley, S. C.	R. E. Flack	Asheville, N. C.
C. M. Tripp	Easley, S. C.	E. W. Pressley	Clover, S. C.
J. L. Bolt	Easley, S. C.	L. W. Hovis	Charlotte, N. C.
S. B. Sheard	Gaffney, S. C.	H. R. Black	Spartanburg, S. C.
Roy P. Finney	Gaffney, S. C.	C. Hugh Black	Spartanburg, S. C.
Hamilton McKay	Charlotte, N. C.	C. T. Smith	Rocky Mount, N. C.
Frank Lander	Williamston, S. C.	E. S. Boice	Rocky Mount, N. C.
Wade Thompson	Anderson, S. C.	J. T. Burrus	High Point, N. C.
Alenzo Myers	Charlotte, N. C.	P. Joseph Johnston	Greer, S. C.
C. P. Corn	Greenville, S. C.	L. A. Crowell	Lincolnton, N. C.
		L. C. Todd	Charlotte, N. C.
		A. A. Barron	Charlotte, N. C.
		B. C. Nalle	Charlotte, N. C.
		T. B. Reeves	Greenville, S. C.
		W. F. Elliott	Lincolnton, N. C.
		J. P. Munroe	Charlotte, N. C.
		W. E. Brackett	Hendersonville, N. C.
		R. T. Ferguson	Charlotte, N. C.

Wm. Allan	Charlotte, N. C.
T. R. W. Wilson	Greenville, S. C.
J. W. Parker	Greenville, S. C.
Frank Wrenn	Anderson, S. C.
W. B. Lyles	Spartanburg, S. C.
J. E. Rawls	Suffolk, Va.
J. M. Fewell	Greenville, S. C.
J. M. Shackelford	Martinsville, Va.
F. Jordan	Greenville, S. C.
I. H. Grimbail	Greenville, S. C.
M. L. Lanford	Greer, S. C.
Southgate Leigh	Norfolk, Va.
G. T. Tyler	Greenville, S. C.
H. W. Chase	Chapel Hill, N. C.
W. P. Turner	Greenwood, S. C.
L. F. Robinson	Greenville, S. C.
J. G. Murray	Greenville, S. C.
Stuart McGuire	Richmond, Va.
L. W. Elias	Asheville, N. C.
A. J. Crowell	Charlotte, N. C.
L. D. Perry	Charlotte, N. C.
D. A. Stanton	High Point, N. C.
Foy Roberson	Durham, N. C.
W. C. Ashworth	Greensboro, N. C.
L. G. Clayton	Central, S. C.
A. B. Goodman	Lenoir, N. C.
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H. C. Shirley	Charlotte, N. C.
J. W. Gibbon	Charlotte, N. C.
W. A. Sheldon	Liberty, S. C.
B. H. Earle	Greenville, S. C.
E. R. Hines	Seneca, S. C.
J. F. Shirley	Honea Path, S. C.
W. R. Haynie	Belton, S. C.
C. H. Young	Anderson, S. C.
J. T. Young	Anderson, S. C.
J. P. Jewell	Piedmont, S. C.
W. S. Ferguson	Laurens, S. C.
C. B. Griffin	Anderson, S. C.
W. B. Furman	Easley, S. C.
H. B. Stewart	Fountain Inn, S. C.
F. H. McLeod	Florence, S. C.
J. K. Hall	Richmond, Va.
Chas. O'H. Laughinghouse	Greenville, N. C.
W. D. Simpson	Greenville, S. C.
J. R. Miller	Rock Hill, S. C.
L. E. Johnson	Greenville, S. C.
Addison G. Brenizer	Charlotte, N. C.
Mary Robinson	Raleigh, N. C.
Muriel Taylor	Charlotte, N. C.

It was moved by Dr. J. A. White, duly seconded and unanimously approved by the Council that the number of papers to be placed on the program hereafter shall be limited to 30.

It was moved by Dr. J. A. White, duly seconded and unanimously approved by the Council that the author of any paper, who does not attend the meeting, shall be debarred for two years afterward from appearing on the program of the Society.

Dr. Southgate Leigh, awaiting the subsequent approval of his local medical society, cordially invited the Association to meet next year in Norfolk. An invitation to meet in Richmond was extended by Dr. F. M. Hodges; also by the manager of Richmond Chamber of Commerce and the manager of the Jefferson Hotel. The invitation to meet in Richmond was accepted. Dr. Leigh was thanked for his hearty invitation to the Association to meet in Norfolk.

It was moved by Dr. F. M. Hodges, duly seconded and unanimously voted by the Council that Dr. W. B. Porter of Roanoke be elected on the Council for Virginia; Dr. Francis B. Johnson of Charleston was elected to represent South Carolina, and Dr. E. S. Boice, Rocky Mount, was elected to represent North Carolina.

It was moved, duly seconded and unanimously approved that "Southern Medicine and Surgery" be continued for the next year as official organ of the Association, and that the editor be paid \$2.00 per member instead of \$1.50 per member as heretofore.

The following applications for membership in the Association were approved:

Dr. Hugh S. Black, Spartanburg, S. C.
 Dr. William Clifton Black, Greenville, S. C.
 Dr. Felix Anthony Blanchard, McColl, S. C.
 Dr. Chas. O. DeLaney, Gastonia, N. C.
 Dr. B. F. Earle, Greenville, S. C.
 Dr. Lucius Gaston Gage, Charlotte, N. C.
 Dr. A. B. Goodman, Lenoir, N. C.
 Dr. Leighton W. Hovis, Charlotte, N. C.
 Dr. Jas. P. Jewell, Piedmont, S. C.
 Dr. Linwood Dickens Keyser, Roanoke, Va.
 Dr. John M. Manning, Durham, N. C.
 Dr. William Francins Martin, Charlotte, N. C.

REPORT OF EXECUTIVE COUNCIL.

11:00 A. M.,

Thursday, February 21, 1924.

Present:

Dr. C. O'H. Laughinghouse, presiding.
 Dr. D. L. Smith.
 Dr. F. M. Hodges.
 Dr. D. A. Stanton.
 Dr. W. R. Wallace.

Dr. H. Stokes Munroe, Charlotte, N. C.
 Dr. W. O. McCabe, Thaxton, Va.
 Dr. Robt. H. Newman, Montvale, Va.
 Dr. Ebenezer W. Pressley, Clover, S. C.
 Dr. Richard M. Pollitzer, Charleston, S. C.
 Dr. R. C. Sample, Hendersonville, N. C.
 Dr. Hugh Smith, Greenville, S. C.
 Dr. Jas. Peterfield Trent, Farmville, Va.
 Dr. David Mial Twyman, Appomattox, Va.
 Dr. Babson Weathers, Gastonia, N. C.
 Dr. W. L. A. Wellbrook, Charleston, S. C.
 Dr. George R. Wilkinson, Greenville, S. C.
 Dr. E. D. Wolfe, Greenville, S. C.

Annual Dinner Ex-Presidents of the Tri-State Medical Association of the Carolinas and Virginia, Greenville, S. C., Wednesday Evening, Feb. 20, 1924.

At the Annual Dinner of the Ex-Presidents of the Tri-State Medical Association of the Carolinas and Virginia, held on the evening of Wednesday, February 20, 1924, in Greenville, S. C., the following gentlemen were present: Dr. Chas. O'H. Laughinghouse, Greenville, N. C.; Dr. Stuart McGuire, Richmond, Va.; Dr. Albert Anderson, Raleigh, N. C.; Dr. Joseph A. White, Richmond, Va.; Dr. Davis Furman, Greenville, S. C.; Dr. Southgate Leigh, Norfolk, Dr. S. S. Gale, Roanoke, Va.; Dr. Jno. P. Munroe, Charlotte, N. C.; Dr. Arch E. Baker, Charleston, S. C.; Dr. Rolfe E. Hughes, Laurens, S. C.; Dr. Hubert A. Royster, Raleigh, N. C., and Dr. J. Howell Way, Waynesville, N. C.

A very satisfying menu was served to which apparently every one present did ample justice.

The President, Dr. Stuart McGuire, presided with his accustomed grace and dignity.

The Secretary, Dr. Robert S. Bryan, Richmond, Va., being regrettably and unavoidably absent, the President designated Dr. J. Howell Way, Acting Secretary for the present occasion.

The illness of Past-President Dr. W. W. Fennell, Rock Hill, S. C., was reported, regrets were expressed, and the acting secretary directed to advise Dr. Fennell of our sincere interest in his early restoration, and desire to see him in his accustomed seat at our banquet table in 1925.

Dr. Baker, duly appointed at the 1923 dinner to lead the discussion on "Arterio-Sclerosis of the Uterus," presented some instructive and entertaining remarks thereon.

The necessity for returning to the general session of the Association prevented the consideration of the remaining topics for discussion.

Dr. Leigh moved Dr. Stuart McGuire be re-elected President, and Dr. Robt S. Bryan, Secretary for the 1925 session and dinner, seconded by Dr. Way, and unanimously carried.

On the suggestion of Dr. McGuire, it was ordered that the Secretary-Treasurer of the Tri-State Association, be extended an invitation each year to dine with the Ex-Presidents.

No further business being presented adjournment was had, and the members in a body proceeded to the evening session of the Association.

Stuart McGuire, President.

Teste:

J. Howell Way, Acting Sec'y.

Address of Welcome.

By Dr. L. O. Mauldin.
 Greenville, S. C.

Ladies and Gentlemen: As to the prayer, it is requested that each utter a silent prayer in his own heart for the success of the meeting, and for the advancement of "Science that knows no Mysteries."

As to the conventional addresses and responses by the different city and state officials, the Program Committee, in order to save time, has seen fit to have these left off, and in fact have almost requested me to make this welcome, while a warm one, in as few words as possible.

By a glance at the program, you will notice that the physicians to read papers from the Greenville County Medical Society are conspicuous by their absence. I wish to assure you, however, this is not on account of any indifference by these members, but it is because when they invited you here, they decided to stay off the program themselves in or-

der to give members of the Tri-State Society from North Carolina and Virginia and other parts of South Carolina a chance to be on. If you will permit us, however, we will be glad to ring in on the discussion of some of the excellent papers you are to present.

We welcome you most heartily into the bounds of the commonwealth of South Carolina, and we wish to tell you that the "latch string" of the South Carolina home always hangs on the outside of the door to the regular medical profession of Virginia and North Carolina.

We welcome you into the realm of the South Carolina Medical Association assuring you that we know when we have a Tri-State Medical Society with us, or when we are with it, we are in keeping with good company, and we know that the communion of thought will be elevating.

The Greenville County Medical Society welcomes you. We have eager minds to learn the many worthy things you have to tell us and want to do all we can to make your stay with us most pleasant and profitable.

The city officials, Chamber of Commerce and the many civic organizations are behind us in welcoming you to the city of Greenville, the "Textile Center of the South," "The Apple of the Eye of South Carolina," and the "Biggest City for its Size in America."

Friends of the Tri-State Medical Association of the Carolinas and Virginia, you are most heartily welcome, and we want you to feel that you are, and we believe that your stay with us will convince you of the fact.

President's Address.

Charles O'H. Laughinghouse, M.D.,
Greenville, N. C.

Gentlemen of the Tri-State Medical Association:

According to your Constitution and By-Laws it is mandatory that your President deliver an annual address.

Before undertaking to give due obeisance to your Society's commands, permit me to express my deep appreciation for the honor you have seen fit to confer. I shall endeavor to assist you in dispatching such business as may be brought before you with as much clarity and harmony as your attitude to that business may permit.

This society was born at Newport News in 1898, it held its first meeting at Charlotte when W. H. H. Cobb declared the organization open for business. It is a quarter of a century old. If your President does nothing else, he will not waste your time entirely by rapidly summarizing what past Presidents of your Society have advocated, and at the same time call to your minds how nearly these recommendations have come to pass.

W. H. H. Cobb delivered your first presidential address twenty-four years ago. His subject was "The Supervision by the State of the Sale of Nostriums Containing Poisonous and Enslaving Drugs." We have lived to see both the State and the Nation meet this responsibility, going even so far as to educate and control the laity and check and supervise the profession in the disposition of narcotics and habit forming drugs.

The following year Charles W. Kollock of Charleston delivered an address on "Medical Education," in which he made a plea for more rigid requirements in the way of the preliminary education of men who would aspire to doctor's degrees. He argued for the reciprocity of licentiates between the Carolinas and Virginia. He urged the medical inspection of schools, the prevention of tuberculosis, the passing of laws prohibiting the marriage of people infected with tuberculosis. It is good to look back and compare the THEN with the NOW, just to note how fully all his requirements have been met.

In 1902 J. H. Upsher discussed the need of a more serious development of internal medicine by the profession. Today diagnostic clinics are being formed in every city of our territory; and in

many hamlets where three or more physicians are located, they have gathered themselves together in such a way as to meet the requirements of modern medicine and surgery.

Next year James A. Burroughs of Asheville had his address consist of a resume of the accomplishments of your Society. He showed its healthy condition, proved its right to live, and prophesied a rosy future, which time has realized.

At the Danville meeting Davis Furman recommended that the Society take steps to connect itself with the American Medical Association. He took the position that the County Society should be the Company, the State Society the Regiment, the Tri-State the Brigade, and the A. M. A. the Medical Corps.

The following year W. L. Robinson made a plea for the prevention of typhoid fever, tuberculosis and preventive medicine generally. He advocated the idea of medical men representing the people in the legislative halls of the country. He approved of local societies publishing certain papers in the lay press and having lectures delivered by medical men to the laymen on medical subjects. Typhoid fever is largely a thing of the past. The machinery for the prevention of tuberculosis is well-nigh as perfect as the present day can make it. Copeland is in the United States Senate. Medical societies all over the country are teaching people how to live and how to escape disease both by written articles and by spoken words.

In 1906 H. A. Royster came to us with a menu of doctors. Doctors political, business, social, quack and near quack, the busy doctor, the symptom doctor, and finally, the ideal doctor. Let me quote: "Finally, I have an Ideal for the physician. I would have him a man whose character is fine and strong, for above all it is character that counts; whose intellect is keen, capable of making what is best out of life; whose judgment places him steadfastly on the unswerving ground of truth and honor, always directing him to see that which is best and highest and yet nimble

enough to keep him away from unalterable opinions; whose love for his profession is so deep as never for one moment to let him forget her glorious precept and whose devotion to his science makes him ever a disciple of learning and culture.

"Our physician shall be enough of a politician to exercise tact and to be of much account in the world; enough of a business man to collect his bills and save his earnings; social enough to be of the greatest service to mankind; enough of an alarmist to give warning of real danger; enough of an enthusiast to take the most alert interest in his work; enough of an all-round specialist to be prepared for whatever he may meet; busy enough to do his full duty; enough of a symptom doctor to relieve suffering permanently if he can—temporarily if he must. Sham and pretense are foreign to the soul of such a man. His feet are set in the path of the open day, and his deeds are known and read of all men."

At Laurens, South Carolina, Rolfe E. Hughes made a plea for the institution of a chair of diplomacy in medical colleges whereby students could be taught to meet the requirements of expert witnesses, and where practical lessons could be given in the etiquette of the sick room and consultation, where the business end of the profession could be entered into and studied.

At Charlotte in 1908 Stuart McGuire took as his subject, "A Brief Review of the History of the Tri-State Medical Association."

Albert Anderson in 1909 discussed the question of a sound mind in a sound body.

Anderson was followed the next year by LeGrande Guerry, who took up the very important question of cancer and what the profession could do to prevent it. Cancer education has been scattered abroad in the land until the laity is thoroughly conversant with the necessity of giving every neoplasm sufficient attention to bring it to the diagnostician.

The following year Joseph A. White gave a most important and scholarly address on what preventive medicine

has done and can do if the State will but recognize its obligation to its people. He made the statement, startling at that time, that both physicians and mid-wives should be compelled by law to use prophylactic treatment in the eyes of all infants at their birth. "Why should the Carolinas and Virginia lag behind in this important work?" says he. It is good to realize today that these three States have long since complied with Dr. White's suggestion.

Twelve years ago J. Howell Way discussed with you the relation of the general practitioner to the evolution of medicine, forecasting the profession's relation to Public Health, prophesying whole time Health Officers, emphasizing the practicability of community hospitals—the cooperation of medical men with public health measures is today accepted as a matter of course. Whole time Health Officers are being employed in a large number of the thickly populated counties of our three States. Boards of Health are being asked by philanthropists, colleges and universities to perfect a practical system of hospitals whereby States can develop a great central hospital as a clearing house for disease and a teaching center for a Medical School, and whereby local hospitals can be erected, financed, and operated for the good that they can do.

Arch E. Baker was your President at Norfolk eleven years ago, his subject being "The Lesions in the Upper Abdomen; their Relative Symptoms to Gastro Intestinal Disturbances." It was among the first local cries of warning bringing out the fact that the stomach and its digestive machinery was in reality an alarm box for organic and gastric disease as well as duodenal, gall bladder, pancreatic and appendiceal disease. Today dyspepsia is admitted only after a most painstaking diagnosis made by exclusion.

At Wilmington in 1914 Southgate Leigh delivered a most practical message on the subject of medical education.

E. C. Register followed Lee, stressing the value of medical Societies amplifying the spirit of co-operation, the one

for all and all for one that every day in every way is coming more and more to pass among medical men.

Register was followed by McIntosh who brought to our minds the fact that the Tri-State had outgrown its swaddling clothes, that every man should have a voice in the election of the executive council. He urged the formation of a committee for the purpose of procuring new members and advised that the President preside at the meetings held in his own State.

In 1917 at Durham, J. Allison Hodges brought us a scholarly message on the spirit of modern medicine in the South.

In 1918 David T. Tayloe delivered a most impressive message, appealing to the patriotism of the physician in time of war.

Robert S. Cathcart brought in his message a description of what the American College of Surgeons hoped to do in the standardization of hospitals, and urged this Society to go on record as co-operating in this movement.

I have no records of the Society's proceedings since 1919. In studying your transactions up to this date one is impressed with the outstanding fact that nothing will mean more to the future history of medicine in these three States than the records of personal and professional achievement recorded therein. Read and re-read them, page by page. The best thought in medicine is there. The best material that has ever been published for future reference is there. I have two suggestions or two messages to bring to you. One is to advocate the continuance of these transactions for the sake of posterity and for the sake of ourselves. In what other way can we better keep a record? Have you thought how sparse material is for the history of medicine and medical men in the Carolinas and Virginia, and in fact the whole South? In casting about for a subject my mind turned to the idea of an historical address. I asked Historians, Librarians, and Scholars in all three states for material with which to prepare such an address. The answer came that no such material existed save in the transactions of our

State and Tri-State Medical Societies.

There are men from South Carolina, within the hearing of my voice, to whom I have written for material, who replied that no such material existed. The same came from Virginia, and from my own State. Let me read you an extract from a letter written to me by R. D. W. Connor, of the Department of History and Government of the University of North Carolina: "The surgeons, physicians, nurses, and hospital staffs in general have never received their share of credit for their work in time of war or in time of peace. We have been so busy acclaiming the soldier who kills that we have overlooked the services of the physicians who save life. In our own case and in our own State, so far as I know, there is not in existence a single printed line recording the work of Doctors in the American Revolution, the war of 1812 or the Mexican war. The only book of the sort on their work in the Civil war is Dr. Warren's "A Doctor's Experience on Three Continents." Verily, the Doctors themselves must rescue their profession from its historical obscurity. Nobody knows anything about their record in other wars except the world war, and possibly the Spanish American war, and we are about to forget that little."

Mr. A. S. Salley of the South Carolina Historical Commission gives the same sorrowful report as does Mr. Connor. Dr. H. R. McIlwaine, the State Librarian for Virginia, is without information and without data.

Seeing that I could get nothing from the Libraries of the States, I turned to the Medical History of the War of the Rebellion, and after poring over page after page, and reading the diaries and daily reports of medical men in the Union Army, I came across this and only this: "I have not the names of the Confederate Medical Officers whose devotion to duty cost their lives, nor have I the names of those who perished from disease consequent upon the nature of their avocation. Many of the former medical officers in the Confederate Army aided in the prosecution and completion of this work, by contribut-

ing histories and cases, pathological specimens, statistical data and facts concerning the termination and end results of major injuries and operations. It may be permitted to express the hope that the services of these men who have contributed so largely to the advancement of medicine will be favorably considered by Congress in the distribution of these volumes." It is more than probable that the copies of the Medical and Surgical History of the War of the Rebellion did go to many Confederate Surgeons. In the library of my grandfather, who was a surgeon in the Confederate Army, there is a complete set of the "Medical History of the War of the Rebellion."

Among the number of Confederate Surgeons who contributed to this History I find in part first, Surgical Volume, page 19, in footnote, very, very small print, the names of Thomas Williams, J. F. Gilmore, John D. Jackson, Hunter McGuire, W. W. Conklin, Claude H. Mastin, J. F. Grant, W. L. Baylor, J. J. Chisolm, H. L. Thomas, T. G. Richardson, J. R. Brice, A. C. Crymes, A. M. Fontleroy, and that is all.

It has not been quite sixty years since this Southland of ours was but a mass of tangled weeds and devastation, bled white of men and means, and bowed down with the humiliation of defeat. Dire necessity and the turbulent times of reconstruction made it well nigh impossible for medical men to give the time or money incident to the preparation and conservation of material for medical history. Such is not the case today.

Reconstruction is not the uppermost thing in our mind. Both the necessities and luxuries of life are ours, if only to a modest degree. We can keep our transactions with no appreciable sacrifice. We ought to do it, and we ought to put copies of them from beginning to end in the Hall of History of North Carolina, South Carolina, Virginia, and Washington, D. C.

I am constrained to make another recommendation, which is that this Society give immediate attention towards the perfection of a Medical Reserve

Corps for these United States. We should join ourselves and urge the membership of the State Societies of Virginia and the Carolinas, as well as members of the Southern Medical Association, to render unto their country service that is nothing less than obligatory to right minded medical men. It may be said that in this hour of peace such a question as recruiting a Medical Reserve Corps should be laid aside for things that are more immediately necessary, but we, as physicians, are not pacifists. We know human nature. We know, too, that whatever we do to perfect a Medical Reserve Corps in our country will be advantageous in the fight against disease in times of peace as well as in times of war. Virginia, North Carolina, and South Carolina ought to have three thousand physicians enlisted in the medical reserve corps of the United States. These three states have only two hundred and thirteen. Virginia has seventy-five, North Carolina, seventy-four, and South Carolina sixty-four. The existence of such a condition as this is a challenge to your citizenship.

Medical and surgical protection of the people of this country in times of war as in times of peace is just as efficient as you make it, and no more so. Thorough preparedness means an adequate military program which insures us against invasion by hostile countries. It was but yesterday that we witnessed the appalling waste of life due to the disorganized condition of the medical profession in 1917. Dis-organization and disorganization only was responsible for nearly every phase of failure that can be charged against the profession in the world war.

The War Department of the United States is endeavoring to procure an enrollment of a sufficient number of physicians in times of peace and then organize into units so that we may be prepared to furnish a medical service for our field armies should mobilization be necessary.

We have now in the Medical Section of the Officers Reserve Corps, approximately eight thousand physicians.

During the world war there were approximately thirty-five thousand. It appears that we should have now enrolled and organized for emergency the full complement of forty-five thousand, required for the maximum effort. But the figures of the Surgeon General's Office show we are thirty-seven thousand short. It is unbelievable that the members of the Medical Profession are intentionally withholding their service and support from the Medical Program for its National Defense.

Ours is a young country. No page in all the history of mankind possesses so rich an interest, no other is so full of prophecy, promise, and inspiration. We see a world of virgin wealth crying to give itself to man and to man's uses, and with it all we see—war. First, war against the aborigines, followed by many conflicts between enemy and envious nations. Our own breaking away from the Mother Country in 1776, the war of 1812, the Mexican war, finally the War Between the States, the Spanish-American war, and the World War, followed always by the tragic commentary, "More men killed by disease than by bullets." A tragic commentary and a tragic indictment as to our own blindness and inefficient organization.

We must keep in mind the fact that after all the medical profession is the real reconstructor of shattered nations. We do not kill, we salvage as best we can the wrecks that are made by war, and upon our skill, organization and preparedness depends the health of the present, and the upbuilding of the future generations. We must keep our ear to the heart of humanity and our finger on the pulsebeat of the soul.

With these thoughts in view I am recommending to this body immediate and thorough attention to the development of a medical reserve corps that is satisfying to our own self respect. When its requirements are met nothing will be left undone. We must realize our responsibility, for like Atlas, we stand with the world on our shoulders.

THE PLAN FOR MEDICAL PREPAREDNESS FOR NATIONAL DEFENSE.*

Major Glen I. Jones, M.C., U. S. A.,
Washington, D. C.

The Surgeon General has directed that I express to you his personal appreciation for the honor which your Association has shown him by extending an invitation to participate in the deliberations of this session. The Surgeon General deeply regretted his inability to be present at your meetings, and was compelled to decline only because of urgent obligations to which he had committed himself prior to the receipt of your invitation.

It is a privilege, earned solely because of my interest in the subject which I have the honor to present to your Association, and poorly deserved because of full consciousness of my inadequacy to present it with the eloquence the subject merits.

In the fall Colonel Joseph H. Way, of Waynesville, N. C., brought to the attention of the Surgeon General the very practical and constructive work which has been done and is continuing in the Medical Society of the State of North Carolina. The proceedings of the North Carolina Section of Medical Veterans and M. O. R. C., U. S. A., of which Colonel Way is chairman, has been of very great interest to the Surgeon General and his assistants.

The excellent insight which Colonels Long and Way have in the Medical Plan for national preparedness and the splendid initiative which the organization of the section indicates portends the successful fulfillment of the War Department's plan for the organization of the medical profession for national emergencies.

The achievements of the medical profession during the World War, won in the face of sacrifice, have added a bril-

liant page to the history of the accomplishments of our profession. Should our country or humanity be again menaced by the dragons of war, the response of the profession will rival that during the World War, and of the achievements, it will suffice if they are equalled in any future emergency.

It is the plan of the War Department to profit by our experiences of the late war by developing an organization in time of peace which offers a reasonable assurance of efficient mobilization for service without the confusion and lack of definition which regrettably characterized our early effort in the World War. To the most critical the causes of unrest, dissatisfaction, and resulting spirit of individual demoralization can be attributed to but one cause, i. e.: our lack of preparedness. It is my purpose to lay before the gentlemen of your Association the plan of the War Department for developing in time of peace a corps of officers sufficient to meet future emergencies, and I hope I may be able to give you a better understanding of the efforts of the Medical Department in providing for the medical service of the forces should we again be called upon to defend the honor of our country and the rights and privileges of unrestricted citizenship which determines the prestige and honor of a nation.

It is a matter of common knowledge that the science of war has developed to such an extent that future conflicts will be quickly decided, and it is now a maxim that the nation prepared for quick mobilization and decisive offensive action will guarantee to itself immunity against military aggression of the despot and imperialist whose degenerate influence on a nation may prompt its people to abandon the pursuit of peace and happiness, or convert its instruments to the more inhuman and uncivilized ones of war. The history of America's wars and the spirit and psychology of its people, always basically influenced and directed by the provisions of the Constitution, forever contradict the allegations and forecasts of the pacifist, whose alarms and preachments

*Read before Tri-State Medical Association at Greenville, S. C., Feb. 20, 21, 1924.

would create the impression that a prepared country will convert the security of adequate defense to an ambition for the exhibition of its military strength in campaigns of aggression against weaker nations.

The more noisy than numerous of our citizens, who allege that military preparedness is undemocratic and leads to "militarism" does not deny the right of governments to impose taxes to operate them and yet personal service to the institutions of governments is the index to and guarantee of democracies.

Certainly, there is no more sacred obligation than a personal service given in preparation for the preservation of the ideals of democracy. In October, 1915, an editorial in the *Adrian (Michigan) Telegram* "The Struggle for Ease" made an eloquent appeal for the welfare of the country. It was appropriate in those days of indecision. It is equally applicable to the present situation.

"The one thing that the average man detests is the idea of doing anything himself. He is willing to give up some money, to hire men, away off somewhere, to man guns and sail ships that he never saw. But when it comes to giving some of his own precious time, and separating himself from his own precious job, in order to learn how to fight if his country need him, he balks. He takes refuge in a cloud of words about 'militarism' and 'millions leaping to arms,' invokes the holy check-book, and hopes that nothing will happen.

"But that very thing—personal service by individual men—is what we must come to. Every other nation under the sun, in every age, has come to it—or else gone down in the dust before more vigorous peoples. As long as the American soldier is looked upon as a hired man, working at a job for the pay that is in it, just so long we shall be without an army worthy of the name. If the safety of the country and the honor of the flag are not worth Mr. Average Man's giving a little of his own time to military service, then country and flag mean little. Trained men alone are worth anything in war; and the only way to get trained men is for Mr. Average Man, and his sons and brothers—his clerks, partners, and neighbors—his employer and his employees—all alike to do their individual shares toward providing for the Nation's defense.

"And finally we must see that our children are not fed on a diet of false ideals, but teach them that citizenship means personal duty and individual sacrifice—that the flag not only pro-

fects but must be protected—that the nation is not a meal-ticket to get fat on, but a glorious master to be served. We have fed too long on the doctrine of the Nation's duty to the individual. It is time we learned that the individual's duty is to the Nation, even unto death."

To be successful any scheme providing for the military preparedness of a democracy requires the clear vision, sympathetic interest, and unalloyed support of its citizens. This is more directly applicable to the medical profession, first because of their influence as leaders in the community, and secondly because of the necessity for a careful study of a highly specialized group of individuals who must be called upon to give service to their country as military men. The medical profession in its work in civil life lends itself with greater facility to the adaptation to military needs of an army than any other group of individuals. The metamorphosis, however, is not free from difficulties. It can be made less tedious to the components, if we have the advantage of careful analysis in the development of organizations in time of peace. It assures greater efficiency in mobilization and operation in time of emergency. Tardy preparation for defense means delayed mobilization and inevitably introduces waste, inefficiency, inconsistency, and uncertainty.

Our military policy as defined in the National Defense Act and its amendment by the Act of June 4, 1920, is more clearly defined than any the country has ever had. It is based on the provisions of the Constitution of the United States and the military policy has been dictated by the National policy. It contemplates the maintenance of a small, highly trained peace establishment, consisting of the Regular Army, the National Guard, and the organized Reserves, all so organized and trained as to provide the framework on which the required man power of the nation is mobilized, trained, armed, equipped, and supplied, and the necessary resources of the nation are organized. The National Defense is admirably planned and provided for in this act. The success of its operation

is contingent upon the sincere acceptance of the obligation which it imposes upon the citizens of this country to accept and promote its provisions in time of peace.

The Officers' Reserve Corps is composed of citizens who voluntarily accept commissions in that Corps as officers of all grades of the line and staff branches of the army. It provides the great mass of officers required for war. In time of national emergency expressly declared by Congress, the President may order Reserve Officers to duty for any period of time.

The mobilization of the Army in an emergency will be largely one of organizations, and officers will be called to duty with organizations to which they have previously been assigned. Such warning as circumstances permit will precede a call of this nature, but no specific period of warning can be predetermined. The nature of an emergency, the urgency for troops or officers of a particular class, and the theatre of operations must be expected to introduce variations into any predetermined plan.

The tremendous advantage of developing these organizations in time of peace is at once apparent to you. Without organization, the National Defense policy will fail of its purpose.

The Officers' Reserve Corps.

For the purpose of providing a reserve of officers available for military service when needed, there has been organized an Officers' Reserve Corps consisting of general officers, of Sections corresponding to the various branches of the Regular Army, and of such additional Sections as has been directed by the President. With the exception of general officers, who are appointed by and with the advice and consent of the Senate, all Reserve Officers are appointed and commissioned by the President alone, by whom the grades in each Section and the number in each grade are also prescribed.

Appointment.

Appointment as a Reserve Officer is not, in any case, to be mere conferring

of a rank, but is made to fill an office in which service may be rendered. Appointments are not honorary, or rewards for past service, but are based primarily upon the qualifications of the appointee to perform satisfactorily the duties of a particular office.

In time of peace a Reserve Officer must, at the time of his appointment, be a citizen of the United States or of the Phillipine Islands, between the ages of twenty-one and sixty years. Any person, however, who may have been an officer of the Army at any time between April 6, 1917, and June 30, 1919, or an officer of the Regular Army at any time may be appointed as a Reserve Officer.

The duties of Reserve Officers of the Medical Department are classed as "special service" and involve a knowledge of the fundamentals of organization, and the care and use of troops. Their service is along the lines of civil professions or occupations, and the primary requisites, in addition to the basic qualities of moral fitness and general education, are satisfactory knowledge of, and stand in, some profession or occupation, with ability to adapt such knowledge to the requirements of military service.

In making appointments, the class of duty for which appointment is desired will be given due consideration. Applicants, in submitting applications will be guided by the general principles stated below.

The lowest grade in the Medical and Dental Officers' Reserve Corps is that of First Lieutenant; in other branches of the Medical Department it is that of Second Lieutenant.

In the case of a former officer of the World War appointment in the Reserve Corps may be made in the highest grade held by him without examination other than a physical one. In the Medical, Dental, and Veterinary Sections of the Officers' Reserve Corps, an applicant who has not had commissioned World War service, and is a graduate of a medical, dental, or veterinary school, and completed successfully the Reserve Officers' Training Corps courses, and been recommended by the Professor of

Military Science and Tactics; or a graduate of a recognized medical, dental, or veterinary school who has passed the National or State Board examinations necessary to qualify him to practice medicine or surgery, may be appointed in the lowest grade without examination. In all other cases an examination to determine the applicant's fitness for appointment is required.

For appointment in a grade higher than the lowest in the case of an applicant who did not serve as a commissioned officer in the World War, and in a grade higher than that held during the war by a former officer, it is necessary that the applicant be able to meet certain well defined requirements.

The conditions under which an applicant without commissioned World War service may be considered for original appointment in a grade higher than the lowest in the Medical, Dental, and Veterinary Officers' Reserve Corps, and for a grade higher than that of Captain in the Sanitary Officers' Reserve Corps, are that he have a record of service during the war which, while not in the military establishment, contributed to successful prosecution of the war, such as service on the Council of National Defense, long service as an examiner of officer candidates or men of the draft, as a member of a draft or advisory board, have been an officer of the Navy or Allied Armies, or possess eminent general or special qualifications and have been barred from appointment during the World War by circumstances connected with the maintenance of essential public institutions such as service as an essential teacher, public health, or other public administrative officer.

In the case of a former officer the conditions under which appointment in a higher grade may be considered, are as follows:

For First Lieutenant—That the applicant have served satisfactorily on active duty in the grade of Second Lieutenant for more than six months; or, if he had less than six months satisfactory active service in the grade of Sec-

ond Lieutenant, that he be over thirty-one years of age.

For Captain—That the applicant have served satisfactorily on active duty in the grade of First Lieutenant for more than six months, or if he had less than six months satisfactory active service in the grade of First Lieutenant, that he be over thirty-one years of age.

For Major—That he have served satisfactorily on active duty for at least one year, held the grade of Captain for at least three months, and his record must indicate that he possesses the necessary qualifications for field grade.

For Lieutenant Colonel—That he have served satisfactorily on active duty for at least one year, have held the grade of Major for at least three months, and his record must indicate that he possesses the necessary qualifications for the higher grade.

For Colonel—That he have served satisfactorily on active duty for at least one year, have held the grade of Lieutenant Colonel for at least six months, and his record must indicate that he possesses the necessary qualifications for the higher grade.

An applicant who had no commissioned service in the World War may be considered for appointment in the Medical Administrative, or the Sanitary Section of the Officers' Reserve Corps, in the grade of Second Lieutenant, if he is under thirty-one years of age, and has had more than two, but less than five years' experience in the Army, or in civil life in duties analogous to the Medical Service of the Army; in the grade of First Lieutenant if he is under thirty-one years of age, and has had more than five, but less than ten years' such experience; or if he is over thirty-one years of age and had more than two years' such experience; in the grade of Captain if he has had more than ten years' such experience, or if he is over thirty-six years of age, and has had more than five years' such experience.

Promotion.

In considering the subject of promotion it must always be borne in mind

that to create and maintain an efficient and properly balanced corps of officers there must exist positions which call for certain specific qualifications, and which carry well defined responsibilities peculiar to the various grades, to which an officer may be assigned.

In the Medical, Dental, and Medical Administrative Officers Reserve Corps, promotion to the next higher grade may not be had before the completion of five years in the next lower grade.

In the Veterinary and Sanitary Officers' Reserve Corps, promotion to First Lieutenant or Captain may not be had before the completion of three years in the grade of Second or First Lieutenant respectively; nor to the grades of Major, Lieutenant Colonel, or Colonel before the completion of five years in the next lower grade.

One year of this service must in every case have been in the Officers' Reserve Corps since November 11, 1918.

The time necessary for promotion will be counted from date of appointment as regards current appointment. In computing service in grade from which promotion is sought, or any higher grade, prior to current appointment, there will be credited service in such grade in the Officers' Reserve Corps since November 11, 1918, and active service in those grades in any component of the United States Army between April 6, 1917, and December 31, 1920, double credit being given for such of the above service as was rendered during the period of hostilities, i. e., between April 6, 1917, and November 11, 1918. There will also be credited service as a federally recognized officer of the National Guard since November 11, 1918. No service of any kind prior to April 6, 1917, can be credited, nor is any but active service between April 6, 1917, and November 11, 1918, to be credited.

Interpretation of Letter of Adjutant General, November 17, 1923, Governing Appointment and Promotion in the Officers' Reserve Corps in Sections of the Medical Dept.

The policy defined in this letter determining eligibility for appointment and

promotion places the subject on a more understandable basis. It eliminates unnecessary examinations, and allows an acknowledgment of work done by professional men of the Reserve by giving credit on examinations for appointments in and promotion to higher grades. The War Department intends that all applicants for appointment or promotion in the Medical, Dental, or Veterinary Officers' Reserve Corps must be physically examined, but no other examination is required for appointment in or promotion to any other grade than that of Lieutenant Colonel, when, in the opinion of the board, the civil or military experience of the candidate justifies belief in his qualifications for the grade and class of duty sought. Examination by a board of officers is compulsory for applicants for appointment or promotion to Lieutenant Colonel, and shall be such as to demonstrate the applicant's capacity to perform the duties and assume the responsibilities of the grade and class of duty sought.

It is apparent that successful perpetuation of a Reserve Corps requires annual increments of new appointees from the graduates and licentiates in medicine. Graduates of Reserve Officers' Training Corps units provide in part for these increments, but the number of graduates of these units only in part fill the requirements necessary to assure perpetuation of a sufficient Reserve, and it is not anticipated that funds appropriated by Congress will provide for the establishment of such units for all medical students so as to give them training, and, after graduation, immediately pass them to the Reserve Corps as officers.

In order to preclude the development of inequalities in grade in time of peace and upon the occurrence of an emergency, it is much to be desired that professional contemporaries become military cotemporaries (in grade) in the Reserve Corps in time of peace, being subject to the same rules governing determination of eligibility for promotion. Under this scheme men graduating in medicine at approximately the same time will be appointed in the same grade

in the Reserve Corps and will be promoted after fixed periods of appointment in each grade, subject to demonstrated capacity to perform the duties of the grade, of Lieutenant Colonel by examination.

Support of this policy by the medical profession will remove all occasion for dissatisfaction as to grade among appointees to the Reserve Corps, and it is desired that the profession encourage the organization of the Reserve Corps so that it can be made a success. It is patent that such a policy tends to create harmony and efficiency in that it removes all occasion for original appointments in a grade above the lowest and provides for justifiable advancement in grades of Reserve Officers in time of peace reasonably commensurate with their progress in civil life.

Examination For Promotion.

When an officer is eligible for promotion he may, upon his own initiative, or upon inquiry from higher authority, signify in writing that he believes himself reasonably qualified for, and is ready to undergo, examination for promotion.

Since the new policy provides for the promotion of officers of the Reserve Corps after fixed periods it is important that all officers apply to Commanding General of the Corps Area in which they reside at least ninety (90) days before the expiration of their appointment in the grade they hold, i. e., termination of the five (5) years period in each grade.

Computation of the five year period includes all time in the grade, active or inactive, and allows double credit for active service between April 7, 1917, and November 11, 1918. It is important that all officers of the Reserve bear in mind the date of expiration of their appointments in order that reappointment may be in the next higher grade for which they may qualify.

Assignment

For administrative control each Reserve Officer is under the jurisdiction of the Commander of the Corps Area in which his permanent residence is locat-

ed. For training or assignment, or both, most Reserve Officers are placed under the jurisdiction of the Corps Area Commander. The term "assignment" refers to an assignment or designation for the class of duty for which it is contemplated to use the officer in time of emergency and for which it is contemplated he be trained in time of peace.

In order that the Officers' Reserve Corps may fulfill the purpose for which it is established, the providing of a reserve of officers available for military service when needed, it is necessary that Reserve Officers be assigned or attached to authorized organizations of the Army of the United States in time of peace; and for this purpose they are divided into three groups:

(a) **General Assignment Group.**—The officers in this group are selected by the War Department, and are for assignment to special duties and activities, which in time of peace or war are not included in the jurisdiction of chiefs of branches or of territorial commanders who function in time of peace.

(b) **Branch Assignment Group.**—The officers of this group are selected by the chiefs of branches, and are for assignment by those chiefs to special duties and activities pertaining to the various branches.

(c) **Territorial Assignment Group.**—This group includes all reserve officers not included in the General and Branch Assignment Groups. Such officers are available for assignment by Department or Corps Area Commanders to any organization or activities within their territory, not exempted from their control by specific orders from the War Department. All officers assigned to duty with troops are placed in this group.

Non-Divisional Medical Department Units Required Under the General Mobilization Plan.

The National Defense Act as it now stands represents the determination of our Government to insure reasonable protection for its citizens and to provide against a recurrence of the precarious and foolhardy conditions existing

prior to the last war. Its provisions are based upon the priceless lessons and warnings pointed out in that great conflict. Measures have now been put in operation for the proper estimation and peace-time enrollment of citizens in an Officers' Reserve Corps in order to insure the ready availability of qualified leaders and guard against the fatal error of leaving their enrollment and classification until the hour of emergency. Further, measures have been taken to group these Reserve Officers into skeleton organizations representing the military units that would be expected to function in case of another war. As a measure of protection this matter of preliminary organization is an all-important one. Its scope has now been chartered in the General Mobilization Plan recently formulated by the War Department General Staff. The evolution of this plan has been an arduous task involving a close study of the likely nature and magnitude of an initial attack.

It will be recalled that the Medical Department, in addition to gathering up the wounded and tending them on the field of battle, has the important duty of establishing facilities for their professional care while relaying them by stages to the rear. The Surgical Hospital, tending the more seriously wounded at the front, passes its patients back when their condition warrants by means of ambulance transportation to the Evacuation Hospital. Here the sick and wounded receive further treatment and those who cannot be prepared to return to the lines are eventually transported on Hospital Trains to the General Hospitals in the rear of the theatre of operations and home territory. The hospital trains are manned by teams of medical officers who care for the patients en route. General hospitals, where the patients are given definite treatment, are grouped according to their location into centers. The headquarters of each hospital center will have its group of consultants and maintain a center laboratory and a convalescent camp for the recuperating patients from its compon-

ent hospitals. There will be slightly wounded, gassed, and exhaustion cases coming to the hospitals at the front who should not be transported outside the combat area. These walking cases are sent directly or later turned over by the evacuation hospital to the convalescent hospital, where they are attended until ready to return to the lines. The convalescent hospital will, therefore, relieve to a great extent the burden on the relay hospitals, but there will always be times when certain of these units become overtaxed with emergency work and special assistance will be needed. This need is to be met by an organization existing for each Army known as the Specialists Group, a center which will be prepared to dispatch groups of specialists to various points as needed. Each Specialists Group is to consist of surgical teams, splint teams, shock teams, gas teams, maxillo-facial teams, research, and miscellaneous teams.

As we progress to the rear it will be found that there is a large number of military personnel so distributed that they are not in a position to receive professional care at the hospital units already mentioned. There are established, therefore, general dispensaries at various points for the professional attendance of the military population and supervision of the sanitation in the area to which they pertain. There will also be scattered station hospitals that can care for the supporting troops and meet the emergencies of epidemics and any overflow from general hospitals. In centers where air service troops are gathered there will also be a need for officers specially trained in the technicalities of air service examinations. Such groups constitute the Aviation Medical Laboratories. The units above outlined for the professional attendance of troops will be required in the following numbers for a force of six field armies:

- 72 Surgical Hospitals,
- 90 Evacuation Hospitals,
- 6 Convalescent Hospitals,
- 72 Hospital Trains,
- 24 Hospital Centers,

- 150 General Hospitals,
- 150 Station Hospitals,
- 6 Specialists Groups,
- 6 General Dispensaries,
- 18 Aviation Medical Laboratories.

(The possible requirements of an extended military operation will necessitate also a provision for 150 additional general hospitals and 150 additional station hospitals.)

The care and conservation of animals, for which activity the Medical Department is also responsible, is closely paralleled by the scheme of hospitalization for the sick and wounded as outlined above. There will be required:

- 24 Veterinary Evacuation Hospitals,
- 6 Veterinary Convalescent Hospitals
- 60 Veterinary General Hospitals
- 30 Veterinary Station Hospitals.

The professional activities enumerated are to be supported along the entire line of organization by adequate laboratory facilities. In addition to the field laboratories of the medical regiments and those of the various hospitals and hospital centers, there will be Army Medical Laboratories and Communications Zone Medical Laboratories which receive the more advanced technical work from the zones to which they pertain, and, finally, the General Medical Laboratory, which is a highly developed scientific unit with facilities for instruction, research, and the manufacture of immunization products. The mobilization scheme will require:

- 6 Army Medical Laboratories,
- 6 Communications Zone Medical Laboratories,
- 1 General Medical Laboratory.

It will be readily understood that the problem of an efficient supply system for the various Medical Department activities is a supremely important matter. It entails the procurement of the necessary combat, hospital, laboratory, X-ray, dental, and veterinary supplies, and the establishment of properly stocked depots as centers of distribution. Units about to take the field are completely equipped at Medical department Concentration Centers and here also returning

units are rested up and re-equipped. There will be required:

- 6 Medical Department Concentration Centers,
- 6 Army Medical Supply Depots,
- 12 Communications Zone Medical Supply Depots.

The technical jurisdiction of Medical Department activities in each Army will fall under the appropriate Army Medical Headquarters while the Corps activities in each Army will in turn be under the supervision of three Corps Medical Headquarters. The Communications Zone Medical Headquarters is the center of jurisdiction for the Medical Department activities in each Communications Zone and General Medical Headquarters coordinates and controls under the Commander-in-Chief all Medical Department activities in the theatre of operations. The Surgeon General's office exercises control over the Medical Department activities in the theatre of operations through General Medical Headquarters and directly supervises such activities in the zone of the interior. In addition to an expansion of the Surgeon General's office there will be organized:

- 18 Corps Medical Headquarters,
- 6 Army Medical Headquarters,
- 6 Communications Zone Medical Headquarters,
- 1 General Medical Headquarters.

Organization of Hospital Units at Civil Institutions.

The Medical Department of the Army in working out its role under the General Mobilization Plan is aiming to direct the way and coordinate the efforts of the medical profession of the country. The profession naturally looks to the Medical Department as its appointed governmental agency to assume the initiative in carrying out the medical phase of the Defense Plan initiated by Congress and elaborated by the War Department. The responsibility for the medical preparedness of his country, however, is also each doctor's responsibility. The practicing physician is not only depended upon to make himself available for his war-time assignment by joining the

Citizens Reserve, but in the creation of certain units he is also relied upon to take over a controlling part in the business of organization. It is well understood that there are activities of the Medical Department during war that have a direct parallel in the professional organization of civil life. This analogy is most conspicuous in the organization and operation of hospitals. It would, indeed, be a violation of the principle of preparedness to neglect the resources already existing in the organization of civil hospital staffs and an injustice to the individual and the Departments in preparing again for war to disrupt these professional associations in which men have learned so well each other's methods and aptitudes. It is the plan, therefore, to preserve as far as possible the civil associations existing in the faculties and staffs of qualified medical schools and hospitals in arranging the personnel for hospital units. The present plan is to organize the entire quota of surgical, evacuation, and general hospitals at civil institutions. It is the intention at present to organize these units only to the extent of their commissioned staffs. Each of these staffs is to consist of a body of Reserve Officers on the staff of the civil institution who can be prepared to branch off as the nucleus of a military hospital in case of war. These officers during time of peace are assigned to the positions they would fill in the unit upon the outbreak of war. The institution at which the unit is formed is said to foster the unit. In favorably considering the matter of fostering a unit the governing body of the institution decide (1) that the institution shall be represented as a unit in the National Defense Program, (2) they select the type of unit to be formed, (3) they designate a commanding officer for the unit.

The institution derives distinct advantages in sponsoring a military unit. Under the present project the selection of personnel for war is placed in the hands of the institution's representative with every opportunity for deliberation and peace-time adjustment. It

is most certain that in another conflict, as in the last, each institution will lose a proportion of its staff, and it must be recognized as distinctly advantageous to an institution to regulate and make adjustment for such losses by organizing its war unit within its own walls. There are also conspicuous advantages to the members of the institution's staff. The situation in the last war is well known. When thousands of officers must be gathered together and fitted into vacant places in organizations upon short notice there can be very little consideration given to individual qualifications and preferences since the essential positions must be filled as the officers become available. When an effort is made, however, to determine individual adaptations beforehand and the correct assignment of officers is entrusted to a representative body in the community where their specialties and preferences are best known, it is believed that a long step has been taken in the interest of the individual as well as the Government.

In considering the formation of a unit the authorities will first be concerned with the type of unit to be undertaken. Officers who served in the World War will well understand the functions of the various units to be formed, but for those without such experience a word about these hospitals will be helpful.

The Surgical Hospital corresponds to the former Mobile Hospital. Its purpose in war is to bring the facilities for expert surgical aid as near to the battle line as possible so that the seriously wounded may not be jeopardized in their chances for recovery by immediate transportation to the stationary hospitals in the rear. The Surgical Hospital is well equipped with surgical and X-ray apparatus, but it always remains a mobile unit, its equipment being transported on trucks. The commissioned staff consists of a commanding officer, a surgical chief, an operating surgeon, 10 assistant operating surgeons, one of whom is to have charge of the medical cases, a Roentgenologist, a dental surgeon, an evacuation officer, who is also

adjutant and detachment commander, a registrar, who is also in charge of the detachment of patients, a supply officer, who is also in charge of the mess, and a chaplain. Fourteen of these officers are physicians. In the event of final organization for war the unit would be expanded by the acquisition of 20 nurses and 90 enlisted men, and would take an equipment for the care of 250 patients which constitutes the normal capacity of the unit.

The Evacuation Hospital is the most important centre for the reception, care, and distribution of war casualties. It receives its cases by ambulance from the hospital companies of the Medical Regiments and the Surgical Hospitals. A large amount of the emergency surgery is done at the Evacuation Hospital and also a considerable amount of definitive surgery when the flow of patients is not too great. These patients who can early be prepared for return to the lines are retained in the Evacuation Hospital, but about 80 per cent of cases must be eventually routed to the General Hospitals in the rear. This hospital is well equipped for surgical and medical care. The staff consists of a commanding official service, four assistant chiefs of surgeon, an executive officer, a chief of surgical service, 11 surgical ward officers, a chief of medical service, two assistant chiefs of medical service, five medical ward officers, an evacuation officer, two Roentgenologists, a laboratory officer, two dental surgeons, an adjutant, a detachment commander, a registrar who commands the detachment of patients, a quartermaster, a mess officer, and a chaplain. Thirty of these officers are physicians. In the final phase of organization there will be added 50 nurses and 281 enlisted men, and equipment would be required for the care of 750 patients which constitutes the normal bed capacity of this unit.

The General Hospital replaces the Base Hospital of the World War. It is a fixed establishment intended for definitive treatment. General Hospitals are thoroughly equipped from a medical and surgical standpoint. Those estab-

lished in the communications zone, when not overtaxed, retain all cases that have reasonable prospects of military usefulness; the balance are transported to General Hospitals in the zone of the interior. The commissioned staff of a general hospital consists of a commanding officer, an executive officer, a chief of medical service, two assistant chiefs of medical service, seven medical ward officers, a chief of surgical service, three assistant chiefs of surgical service, eight surgical ward officers, a chief of dental service, three dental surgeons, a receiving and evacuation officer, a laboratory officer, a Roentgenologist, and chief of laboratory service, adjutant, a registrar, and detachment commander, a commanding officer of detachment of patients, a quartermaster, two assistant quartermasters, a mess officer, and a chaplain. Twenty-eight of these officers are physicians. The organization for war would also require 120 nurses and 312 enlisted men. The normal capacity is 1000 beds.

In deciding upon the type of unit to be adopted an institution would have to consider the number of officers that could be contributed for such an organization together with the special adaptations of those available from the standpoint of their professional specialties or war-time experience. For example, a Surgical Hospital has a small staff which is practically entirely surgical. There is a possibility that the men selected might be exposed to periods of intensive work and occasional physical hardships. The Evacuation Hospital has rather a large staff. While well prepared to handle medical cases, there is apt to be also a large preponderance of surgical work at this station. A great part of the surgery may be emergency surgery, which could at times reach a volume placing large demands upon the physical resources of the surgical staff. The General Hospital has a fairly large staff with the medical side well represented. The work here corresponds more nearly to that of a General Hospital in civil life, being routine rather than emergency

in nature. It is desirable that as far as possible institutions which were represented in the last war by Mobile, Evacuation, and Base Hospitals should perpetuate the history and traditions of these units by organizing corresponding units under the present project.

In deciding upon the type of unit to be formed, the question will always arise as to the number of the hospital staff that could be spared for the organization. It is important to note in this regard that the entire staff of the unit need not be selected from the staff of the institution. The Commanding Officer of the unit, as the institution's representative, usually selects members of the civil staff for the key positions in the unit and as many as can be spared for the subordinate positions. Such selection is based upon the sound principle that the unit should be representative of the parent institution. In some cases, however, it will be necessary to select, especially for the junior positions, members of the community not holding places on the staff of the institution. This plan of organization satisfies the conception that, in a broader sense, a unit is rather the representative of its community. As a matter of fact, it is expected that in the final organization for war the enlisted personnel for a hospital unit will be recruited locally from the community in which the unit formed.

Where an institution has an abundance of candidate officers more than one unit may be formed. There are at present four institutions undertaking the organization of three units each. Several are forming two units. Where more than sufficient personnel can be gathered together for the organization of a single unit, but not a sufficient number to complete a second unit, the additional officers may be enrolled as an auxiliary staff to act as replacements for vacancies occurring in the basic unit. In this way the completeness of the basic unit is always insured, and the members of the auxiliary staff, while acting as understudies, have the advantage of peace-time promotion and may

at a later time be augmented into an independent unit.

When an institution has decided upon the type of unit it will form and this information has been made known to the Surgeon General, the unit will be authorized under a name and number. The name customarily given is that of the hospital at which the unit is formed. Where a medical school is undertaking the organization of units the question sometimes arises as to whether the units should bear the name of the school or the names of the affiliated hospitals from whose staff the personnel are drawn. This is a question to be decided by the authorities of the institutions concerned. When units are organized centrally by a school and the staffs are selected from pooled personnel without regard to their separate hospital connections, it is customary for the units to be given only the name of the school. If the identity of the hospital staffs are preserved, the units generally bear only the names of the parent hospitals, but they may also carry the name of the school concerned either in a separate or hyphenated designation. Units are given numbers by the Surgeon General according to the Corps Areas in which they are located. Groups of numbers available for each type of unit are allotted to the various Corps Areas beforehand. In assigning these numbers an effort has been made to provide for the perpetuation of former units by allotting the old numbers to Corps Areas in which are located the institutions that sponsored these units during the world war.

In addition to deciding upon the organization of a unit, the governing authorities of an institution are also expected to designate an individual desired to command the unit. The choice of a Commanding Officer, whom the War Department accepts as the institution's representative, is probably the institution's greatest responsibility in insuring the fitness of the unit to represent it in the field. Considering the size and activity of the unit under conditions of war, the institution can afford to be represented only by a man of considerable

organizing and executive ability and resourcefulness. In choosing a Commanding Officer the governing body of the institution actually becomes an important agency of the War Department. The recommendation of the institution's authorities in this regard is almost never questioned. It is well appreciated that the responsibility for a proper choice redounds largely to the interest and credit of the institution itself. As a matter of fact, the choice of the institution is always confirmed by the War Department unless the candidate has an adverse war record or is not eligible for adequate grade under War Department rules. Any candidate eligible for the grade of Major, however, is qualified in point of rank to command a hospital unit.

It is quite conceivable that, in order to arouse the interest of the newer graduates in joining the unit, an institution may find it expedient to select as Commanding Officer, or to permit for assignment as Chief of Service, a member of its staff who would be essential to the needs of the institution in case of war. Such an individual would play a valuable part in the peace-time organization of the unit and in case of war would be readily released at the institution's request in favor of his understudy in the unit.

When the institution has announced its choice of a Commanding Officer, he is assigned to this position if already a member of the Reserve Corps; and, if not, the assignment is made as soon as his appointment in the Reserve is accomplished. All further correspondence relative to the unit is then conducted with the Commanding Officer. He is furnished with a list of the positions to be filled in organizing his staff and he secures candidates to fill as many of these places as possible. All members of the unit must become members of the Reserve Corps and the first responsibility of the Commanding Officer will be the matter of having his candidates enrolled. In applying for enrollment each member is required to submit an application form filled out in duplicate and a physical examination re-

port to the Commanding Officer of the Corps Area in which he resides. Here initial action is taken on the application and the same is forwarded to the War Department for final action. Where the candidate is applying for a higher grade than he held during the war, the regulations still require that three letters of testimony will accompany his papers. All applicants should specify in their applications their desire for assignment to the particular unit concerned. As each officer receives his appointment in the Reserve Corps, his name is forwarded to the Commanding Officer of the unit for a designation of the position in the unit for which his service is desired. If the Commanding Officer can decide beforehand the positions in which he desires his candidates to serve, it simplifies the process if he submits a list of the candidates according to their desired positions for the Surgeon General's reference in issuing the assignment as the candidates receive their appointments.

It has been asked why it is necessary for the members of a unit to become enrolled in the Officers' Reserve Corps. It should be understood that the Officers' Reserve Corps is simply the War Department list of those qualified citizens who have registered their willingness to serve as officers in a national emergency. The pledge that any individual would take, therefore, in expressing his availability for duty in an Army hospital in case of war is the same as that constituted by his enrollment in the Officers' Reserve Corps. The staff of the unit when active would be made up of active officers and in keeping with the principle of preparedness the staff of the unit when in reserve should naturally be manned by Reserve Corps Officers. It is evident that in some quarters the responsibilities of members of the Officers' Reserve Corps are misunderstood. Contrary to a prevalent belief, Medical Reserve Officers are not obliged to take training or other active service in time of peace against their will. It is provided that Reserve Officers can be ordered to active duty for 15 days in a year, but this is not to be made effec-

tive where business or other good reasons interfere. As a matter of fact, the requests for training have been so far in excess of the number that can be accommodated under the limited appropriations, that the chief difficulties lie in that direction. It is well to know in this connection that the Reserve Forces are not to be called out in a situation that can be handled by the Regular Army and National Guard Forces, and also that the President has no power to order out the Reserves except in case of a national emergency expressly declared by Congress. Reserve officers, of course, have also full privileges of resigning their commissions. It is believed that these points should make it clear that candidates for hospital units who become enrolled in the Officers' Reserve Corps are not curtailing their everyday liberties in the least. Membership in the Reserve Corps is also a means of insuring automatic peace-time promotion to those who have evidenced their support of the National Defense Program by joining its ranks.

The matter of grade in organizing units is one that might give rise to endless discussion and contention, were it not for the fact that grade in the Medical Department Reserve is determined under fixed rules that do not take account of such conditions of variable interpretation as one's standing in a particular hospital or locality, his society or teaching connection, etc. Nor do these rules take account of the position a candidate is to hold in the unit. These stipulations can be readily understood when it is realized that hospital units are only one of many types of military bodies into which Medical Department Reserve Officers are being organized and to confer grade according to the position for which a candidate is selected would be an injustice to the other members of our Reserve Corps who must receive their appointments under the basic rules. In the Tables of Organization there is a grade designated for each position in a unit. These grades, however, must be disregarded for purposes of peace-time organization. The Commanding Officer is simply asked

not to select as Chief of Service a candidate who will not at least have equal rank with those who are to serve under him. It is not undesirable to leave room for the promotion of candidates within their assignments. The normal grade designated for each position on the staff is in reality the limiting grade for an officer holding that assignment. It is the grade, however, in which the officer would be expected to function in case of war and, therefore, a Reserve Officer who had not by promotion reached the grade specified for the assignment he is holding, would in time of war be elevated in accordance with the grade his position calls for. It might be brought up in this connection that since Medical Reserve Officers receive a promotion every five years an officer would eventually surpass the normal grade for the position he is holding and, therefore, become ineligible to continue in the assignment for which he has been chosen. This condition will occur, but it is the dominant intention that officers shall advance in rank and responsibility of assignment along with their advance in the ranks of the profession. There are always attractive assignments for officers gaining higher rank. If professional duty with the original hospital group is of primary consideration and there is no place for a higher position in the unit, the higher grade will offer the opportunity of an assignment as consultant in the Hospital Center of which his unit is a part.

Hospital units have no official peace-time activities as organizations. Recently one of the more advanced General Hospital units voluntarily established a station for the medical care of casualties occurring in the course of a large civil convention after having drawn the necessary medical supplies from the nearest Army Supply Depot. This service was discharged with great credit to the Commanding Officer and his entire organization and received the commendation of the Surgeon General, but was purely voluntary and undertaken without the previous knowledge of the War Department.

After the initial correspondence pertaining to the establishing of a unit and the enrollment of personnel, the Commanding Officer or his Executive Officer will not be burdened with any routine correspondence. No returns or periodic reports are required. It is merely expected that the Surgeon General will be notified of any change of status that will effect an officer's eligibility for membership in the unit, such as permanent change of residence to another Corps Area. Changes of assignment within the unit will be made at the request of the Commanding Officer.

It will be noted that the official designation of the positions on the medical and surgical services of each unit are listed as Chief, Assistant Chiefs, and Ward Officers. There is no specification of the various medical and surgical specialists. The object of this classification is to give the Commanding Officer latitude in choosing and distributing his personnel and especially to enable him to select men as directors upon their administrative qualifications and without regard to their specialties. The organization of the nursing and enlisted personnel of these units is not contemplated at the present time. If, however, a Commanding Officer has requests from local nurses for membership in the unit they can be listed for service with the organization by registering with the American Red Cross which constitutes the Nursing Reserve of the Army. If a Chief Nurse is chosen, her name should be submitted to the Surgeon General's office. If the Commanding Officer can find suitable material in his community for the non-medical positions such as Chaplain, Quartermaster, Adjutant, Registrar, Mess Officer, etc., they can also be enrolled in their appropriate branch of the Reserve Corps and assigned to the unit. If such candidates cannot be secured from the community, local Reserve Officers can be assigned directly by the War Department.

It is the theory in organizing hospital units in time of peace that each man will be placed in readiness to drop into

an allotted place upon the sound of the trumpet. As a matter of fact, however, there need be no fear that any unit will be called without adequate warning. It is inconceivable that any emergency of an extent that would require the participation of the Reserve forces could come upon us without many months of international controversy and strained relations with another power. It may be well to repeat in this connection that the Reserve forces constitute the third line of defense and are only to be called in a situation that cannot be adequately handled by the Regular Army and National Guard.

It has already been asked whether it is actually intended that hospital units as now organized would be used in case of war. To this it can be answered that the very object of the present work of soliciting institutions, enrolling and assignment of men to appropriate positions and bringing the various staffs to a state of completeness, is to insure that such work will not have to be done when an emergency arises. The business of organizing these units is rather a matter of years than months, and it is a matter of organization that cannot be repudiated or repeated. In case of another war it is the plan to order out units instead of individuals. Peacetime organization is, therefore, advance war-time organization.

It has been frequently questioned whether it is at all necessary to bend our efforts towards measures of preparedness for war at this time. It is certain that no man who thinks squarely of the possibilities of the near or remote future can question the wisdom of pursuing some scheme of military preparedness without further delay. The question of the proper time is, of course, a relative matter; but it must be admitted that delay is by far the more dangerous alternative.

The commissioning of groups of physicians in civil hospitals to insure satisfactory facilities for the proper and early care of the sick and injured of battle can be regarded only as a humane provision for the possibilities of the future.

It is no more than other countries have already done, and would in no way excite suspicion. If such preparations, however, were begun upon the threshold of international differences and controversies to which our Government was a party, a construction would be put upon our motives that would prove embarrassing to our Government and decidedly prejudicial to the settlement of our external relations. It will also be recalled that during the last war we were not required to meet the enemy upon the declaration of hostilities. As a matter of fact, it took a full year of the most intensive preparation to make our organization sufficiently effective. Will we dare to rely again upon the chance of having gracious allies to hold our enemy at bay for a full year while we are making headlong and expensive efforts at preparation? Can we again afford to count upon such a convenient armistice for our forces at the outbreak of hostilities as will enable us to organize our hospitals and other units for war? Certainly no citizen could answer these questions affirmatively if he were in full possession of the facts—if he knew the means at present being devised to effect overwhelming and decisive onslaught and conquer an unprepared nation upon an initial stroke.

Army Correspondence Courses.

"It is the purpose of the Army Correspondence Courses to give to the student, by correspondence school methods, a knowledge of the duties which every medical department officer of the Army may be called upon to perform soon after his entry upon active service. Early post duties, organization and tactical employment of line troops, service with the Medical Regiment and Medical Detachments, hospitalization, sanitary devices, first aid and military law are covered. Special lessons for dental and veterinary officers are provided and an advanced course in special subjects for reserve officers of the higher grades is also used. During the past year National Guard and Reserve officers of the Medical Department volunteered for enrollment for these courses, a total of 2193 receiving this class of instruction. For 1924 the enrollment promises to be fully as large. Application to take the course should be made to the commanding general of the corps area in which the applicant resides."

R. O. T. C.

Camp Training of Medical Department Officers of the Organized Reserves.

"The object of the organized reserves is to have available at the beginning of hostilities a supply of well trained reserve officers who will begin the training at once of the raw troops who must be drafted to form the National Army. Upon our entry into the World War the Army was engulfed in the tremendous pressure of preparation for war and the lack of trained reserve officers was keenly realized.

"In every Corps Area throughout the country a number of Medical Department officers of the organized reserves received camp training last summer. Among the larger camps utilized for the training of the reserves were: Camp Devens, Mass.; Camp Dix, N. J.; Camp Mead, Maryland; Camp McCellan, Alabama; Camp Knox, Ky.; Camp Custer, Mich.; Fort Leavenworth, Kan.; Fort Snelling, Minn.; Fort Sam Houston, Texas; Fort Sill, Oklahoma; Camp Lewis, Washington, and the Presidio of San Francisco, California. One of the largest camps held for this class of personnel was at Carlisle Barracks, Pa., where reserve officers from the Second Corps Area were assembled for training in conjunction with the Reserve Officers' Training Corps student camp, which arrangement proved to be very satisfactory. It is hoped to order to the Carlisle camp next summer a small number of Reserve officers of the Medical Department from the First, Second, third, fourth and fifth Corps Areas to receive field training for the period of 15 days. This plan depends upon the availability of funds for the purpose and the Reserve officers occupying administrative and command positions will be given preference in making the selections from the several Corps Areas.

"Altogether about 8100 Reserve officers of all branches of the Army received training in the 15-day camps during 1923. The very best medical talent of the country was represented in the camps, the object of the training being to better qualify officers of the Organized Reserves for the performance of the duties of their grades in the event of another emergency.

"In general the training, while only of 15 days' extent, deals with calisthenics, setting up exercises, the tactics and technique of medical service in campaign, drill of Medical Department troops, physical examination of recruits, inspection of equipment, procurement and accounting of supplies, medical and general; selection and inspection of camp sites; water purification, sanitary inspections; tactical problems and terrain exercises with line troops; location of aid stations, ambulance stations, the collection and evacuation of 'wounded,' map reading, conferences, reviews and other related duties pertaining to Medical Department activities. About eight hours'

work per day is required while in camp and it is believed that all officers undergoing this training last year were greatly benefited which fully justified the effort and expense incurred in holding the camps. Owing to insufficient appropriations all applicants could not be accommodated in 1923, and officers who desire to take this training in future are advised to make timely application to the commanding general of the Corps Area in which they reside.

"National Guard and Reserve officers, in the event they are not ordered to active duty, may volunteer to attend camp at their own expense at any time and for as long a period as they may desire. Last summer many National Guard and Reserve officers of the Medical Department volunteered for the summer military training without expense to the government, motoring to and from camp and paying their own mess bills at a nominal sum of about one dollar per day. The camp authorities provided shelter, bedding and other necessary camp equipment to such officers. The plan appears to be an excellent one as it gives to the busy practitioner an opportunity to attend camp and receive the benefits of training during the normal vacation season. The officer volunteering for training will find himself greatly benefited physically and well repaid, considering the small expense involved."

MEDICAL EDUCATION.

By Dr. H. W. Chase, President, University of North Carolina, Chapel Hill, N. C.

The history of formal medical education in the United States begins with the creation in 1765 of a professorship in the theory and practice of medicine at the College of Philadelphia. Almost from the start there was, for the students, access to the hundred and thirty or so beds in the wards of the Pennsylvania Hospital, under the supervision of Thomas Bond, the first professor of clinical medicine.

This promising start for medical education in the United States set, however, a pace destined not to be maintained, though a few other schools were established as parts of institutions of learning. These early medical schools

were designed to supplement in helpful fashion the apprenticeship system then in vogue. As this decayed, and with the pressure from quite untrained youth for entrance, the work done in medical schools lapsed to something far more elementary and much less satisfactory in character. Furthermore, early in the 19th century there came into existence the proprietary school, operated as a private enterprise for profit, and, in the absence of state boards, qualified its graduates for practice, whatever the standards and equipment of the School were. Some of these schools, to be sure, rendered fine services, but with the rapid progress of the sciences that underly medicine it became more and more impossible for the majority of them to equip themselves for the adequate teaching of new and fundamental bodies of knowledge, while many of them, in addition, lacked clinical facilities altogether, confining themselves to the didactic lectures.

In 1846 came the foundation of the American Medical Association, with a program from the start calling for suitable preliminary education "for students entering medical schools, and for uniform elevated standards" throughout the country for the degree of M.D. Progress in these directions, however, was very slow. A few institutions began gradually to raise requirements and grade classes, but it was not until the organization of the Johns Hopkins Medical School in 1893 that medical instruction was anywhere in the country put on a thoroughly modern, well-equipped, university basis.

In 1901 the American Medical Association published its first statistics on medical education. At that time there were in the United States 159 medical schools, of all types and varieties, which graduated that year 5,444 students. In 1906 the Council on Medical Education of the American Medical Association, established in 1904, reports 160 medical schools in the United States, while 154 sufficed to serve the needs of the remainder of the inhabitants of the planet outside the United States. The first classification of medical schools was

*Address at Tri-State Medical Society, Greenville, South Carolina, February 20-21, 1924.

made by the Council in 1907, and a second in 1910, while a country-wide inspection was made in 1909-10 by representatives of the Council and of the Carnegie Foundation. The report made as a result of this survey, by Abraham Flexner, to the Carnegie Foundation, shows a situation which had, indeed, begun steadily to improve, but which was still, in many respects, chaotic. The number of physicians in the whole United States averaged one to every 568 people, and the medical schools of the country graduated over 4600 more from 131 medical schools. Of these schools, 16 required two or more years of college work for entrance; about a dozen, one year of college; the remainder, a high school education "or its equivalent"—the term equivalent in many cases being interpreted to cover almost any degree of education. Some institutions registering students, as they themselves said, "on faith" or to "try-out", whatever their education or lack of education may have been. The proprietary school operated for profit and declaring dividends to its stockholders annually, still flourished; facilities in many cases were almost lacking either for teaching the laboratory sciences or for clinical work. One Southern state, for example (not one included in this association), with a population of two and a quarter millions and a ratio of physicians to population of 1 to 681, maintained nine medical schools, six white and three colored. Seven of these were wholly dependent on fees from students for their support. One of the colored institutions, with an annual income of about a thousand dollars, had no laboratory and no clinical facilities, though in this connection there may or may not be some point to the statement that it occupied a floor above an undertaker's establishment. The facilities of one of the white schools, with an enrollment of 112 students, and an income of \$4,290, and a normal entrance requirement, consisted of a dissecting room with two tables, a room with a few old specimens and one microscope that was the equipment for histology,

and bacteriology, while occasional amphitheater clinics were held at a small hospital near-by, the students not being allowed to enter the wards. Today this same state has three medical colleges, two white and two colored, all adequately equipped, all requiring two years of college work for entrance.

This is typical of what has been happening throughout the country since 1910. In 1914, the Council on Medical Education stipulated a requirement of one year of college work for entrance to a Class A School, and in 1918 this was increased to two years. So far as clinical instruction is concerned, you are familiar with the Class A standard of a 200-bed hospital under control of the school. Fifty-one medical schools have been abandoned or consolidated since 1910, leaving now a total of 80, of which 71 conform to the Class A requirements, three are in Class B, six in Class C. Seventy-four of the schools are non-sectarian. Of the graduates of these 80 schools in 1923, over half held bachelors degrees in arts or science, as against 15 per cent in 1910.

Now what have been the effects of this rapid and steady advance of students?

The effect on the type of training received by the men who are turned out with all that means to the public is obvious. But there are, of course, other phases to the problem, important among which are those relating to the number and distribution of physicians in practice. It will be well to get the facts before us.

In 1901, when the first statistics were published, medical schools enrolled 26,417 students. By 1919 enrollment in the remaining schools had fallen to 13,052, or just about half as many. Naturally, the disturbed condition of the country at that time played some part, but, aside from this, enrollment had been steadily decreasing. The year 1919 represents, however, the low-water mark, and since then increase has been rapid, at the rate of about 1000 each year, until last year (1923), it had risen to 17,432, the largest since 1912.

The low-water mark of graduates was reached naturally somewhat later, in 1922, when 2,529 men graduated, a number which was increased to 3,120 in 1923, and will steadily increase, as increased enrollments show, from now on. It may be interesting to note in that-connection that in this year's freshman class at the University of North Carolina, 123 men signified their intention of pursuing medicine as a career, and that was the largest group of men expressing a choice of any profession, teaching and law ranking next with about 100 each. In the meantime the supply of physicians in proportion to the population has fallen somewhat, from 1 to 568 in 1910 to 1 to 720 in 1920; that is, each physician served on the average in 1920 a population of 152 more than in 1910, a fact which, with the development of the automobile and of good roads during the decade, does not seem especially alarming, especially as it was the consensus of opinion in 1910 that medicine as a profession was overcrowded. Furthermore, as I have indicated, the trend is now upward; enrollment in medical schools is increasing rapidly and the younger generation, in spite of the increased expense, is, if our experience is typical, interested in medicine as a career. The difficulty today is rather that medical schools, with all their advances in standards, are overcrowded, and that expansion is an expensive matter.

The question as to the distribution of physicians is more perplexing. In general, the cities and towns tend to be over-supplied, the rural areas under-supplied. I do not believe, however, that this is a state of affairs which an increase in the number of medical graduates will automatically correct. It existed before the days of advanced standards and smaller enrollments, it is repeatedly referred to in the Report of the Carnegie Foundation in 1910. Its reasons lie deeper than advanced standards and higher fees. We are dealing, in other words, with the same fundamental trend that, just in proportion as cities have grown up, has attracted men of all walks of life to them as an ampler

field of opportunity. It is a trend accelerated in this instance by the enlarged area of practice made possible by the automobile and good roads. A medical friend of mine holds that the coming into general use of the automobile has had more to do with the disappearance of the old type of country doctor than all other agencies combined. Today a physician can of course live in town and carry a country practice of an extent impossible even a few years ago, and as a rule he prefers to do so. It is probably true that a notable increase in the supply of physicians might, because of increased overcrowding in the towns, force some men back into the rural districts, but it is probably also true that, in general, those would tend to be the least able and successful. It is essential, at any rate, to realize that we are dealing in the problem of the distribution of physicians with a fundamental drift of things that is the result of causes involving the whole structure of modern life, and is not chargeable to changes in the standards of medical education. It is possible that a partial solution lies along the line of increased provision of hospital facilities, frankly realizing that the unequal distribution of physicians is a fact which will very likely be emphasized, rather than diminished, as the urban population of the country increases.

I have spoken so far of the situation in the country as a whole. In the three States included in this Association there are, as you know, five medical schools; the two in North Carolina being two-year schools. All these are class A schools, and they enrolled in 1923, 677 men, 190 of these being from States other than those in which the schools are placed, while on the other hand there are 497 men from these states enrolled as students in schools outside these three, or a total of 966 students from the three states enrolled in the medical schools of the country. Only about 50 per cent, in other words, of students from these states are enrolled in medical schools in their own states. This figure is swollen, of course, by the fact that North Carolina maintains no

four-year school. North Carolina, with its two two-year schools, attracts twelve men from other states, and enrolls in other states 260. South Carolina, with one four-year school, attracts six from other states, and registers in other states 89. Virginia, with two four-year schools, attracts 172 and loses 130. About one-eighteenth of the students enrolled in medical schools of the country are from the three states, which contain roughly just about the same proportion—that is, about one-eighteenth—of the country's population. On the other hand Virginia, with its two four-year schools, is the only one of these three states at present bearing its due share of the education of the medical students from the three states.

In the proportion, too, of practicing physicians to population, both the Carolinas are, with North Dakota, at the foot of the list of States. The figures for North Carolina are one physician to 1,133 population, and those for South Carolina are about the same. The situation in North Carolina is still further complicated by the fact that both its schools are two-year schools, and that it is altogether possible that, aside from difficulties that increasing enrollment in four-year schools all over the country will bring in locating men desiring to enter their third year from two-year schools, the two year schools may, within the next fifteen or twenty years, find theories of medical education so altered that the two-year school as an independent unit may cease to exist. At present there is a rather sharp separation between the laboratory instruction of the first two years and the clinical instruction of the second two; a separation that, however, is gradually becoming blurred and may sooner or later give away to a more unified type of curriculum in which clinical applications are taught along with laboratory work from the beginning. There seems to be a growing dissatisfaction with the present medical curriculum, and a growing tendency to move in precisely this direction. Should this tendency prevail, the two-year school without hospital facilities would be in the end as unable to

maintain itself as was the old type of didactic school when the importance of hospital contacts came to be realized.

We at the University of North Carolina, keeping all these facts in mind, have felt that we should press for the expansion of the present two-year school into a four-year school at the earliest possible moment, and we propose to continue in our efforts toward this end. A territory which, like these three states, is only caring for half of its medical students in its own schools, is certainly not overloaded with facilities for medical education, and should the two-year North Carolina Schools some day be forced to discontinue, the situation will become very difficult.

To sum it all up, it seems clear that medical education has succeeded without undue disarrangement of conditions, considering the country as a whole, in placing itself on a basis which enables medical schools today to deal with a group of men with sufficient preliminary training to profit by thoroughly scientific methods of instruction in the modern sense of the term. It is now the medical curriculum itself, rather than standards, on which attention is becoming focussed, and it is without doubt in this region that the next great advance in medical education is due to come.

EARLY DIAGNOSIS AND PREVENTION OF MENTAL DISEASE.

Louis G. Beall, M.D., Black Mountain, N. C.

In the combat with any disease the greatest amount of good is accomplished by prevention, and we should endeavor to prevent mental disorders just as we are now preventing typhoid fever, small pox and diphtheria. In order to do this the earliest tendencies towards mental disorder should be recognized and corrected. This study involves economic, social, educative and medical factors.

*Read at Greenville meeting of Tri-State Medical Association, April 20-21, 1924.

Mental disorder, like everything else, has a beginning, and as rule it develops by degrees so slow and subtle that we may fail to recognize the trouble while in its most curable stage. Many times the mental disorder seems but to be an exaggeration of normal thought and action and it requires the most careful consideration to say when the dividing line has been passed and the conduct has become abnormal.

A careful study of the family history should be made so as to determine if there be a tendency towards mental instability. The child tends to inherit every attribute of the parents. If our parents or grandparents have had an unstable nervous system, we have a tendency towards an unstable nervous system. I would emphasize the word—tendency—because it is not necessary that we become insane because our ancestors were of unsound mind, any more than it is necessary that we develop tuberculosis because our parents have been tuberculous.

One of the most important factors in the prevention of mental disease is the knowledge of these hereditary tendencies in childhood. Heredity is the foundation upon which the environment erects the superstructure. If the foundation is broad and strong, the structure may be tall and stately, ornate and beautiful. If the foundation is weak the structure must be limited and adapted to that foundation. To attempt to place a heavy building upon a weak foundation is to invite disaster. Heredity gives to each individual certain personal peculiarities or characteristics of mind that are forceful in determining what the permanent emotional attitude shall be. These tendencies and characteristics, given by nature, are being perpetually energized, antagonized, and changed by the physical, social, intellectual and moral forces of the environment. We know that these personalities show tendencies so characteristic of the different forms of mental disorders that they indicate that form of mental disease to which that person is especially liable, and that the symptoms shown in a period of mental

illness are in many instances but the exaggeration of these normal tendencies.

For example, a person, who, in early life, shows a lack of ability to adapt himself readily to changes in environment, and tends to become reticent and seclusive, absorbed in his own thoughts and interests, overwhelmed by the responsibilities and requirements of life, may, in order to escape from an unpleasant situation, develop a mental disorder called *Dementia Precox*, for by this means he escapes the world of reality and creates a new and imaginary world in which he can live in greater comfort.

One who does not get along well with people, is conceited and selfish, easily offended and quarrelsome, feels that he is not fairly treated, and that he is not given an equal chance in life, may develop the stronger and more fixed delusions of *paranoia*.

Another person who is highly emotional, enthusiastic, intense and inclined to exaggerate, easily excited, easily irritated, constantly active, shows tendencies and characteristics which, if intensified, may develop into *mania*. The individual who is easily disturbed and made unhappy by trifling occurrences, who worries over small affairs, is easily depressed, has fits of the blues, has a feeling of unworthiness, shows an inclination to develop a depressive psychosis.

Another who is over sensitive, constantly tired and nervous, indecisive, worried about the past, anxious about the future, harassed by minor bodily ills, disturbed by fears and forebodings, reveals the oncoming symptoms of the psychoneurotic.

In some of the mental disorders and especially in *paresis*, it is the subtle and almost imperceptible change in the moral or intellectual character which calls our attention to the beginning mental illness. The keen business man who once was the soul of truth and honor, who was careful about his appointments, neat in his appearance, even tempered, reverent in his attitude towards religion, kind and considerate of

his wife and children, who begins to show a lack of memory, or an indifference towards his business and social obligations, or who becomes careless of his personal appearance, who begins to curse and swear, becomes cruel and irritable, flying into fits of temper upon the slightest provocation shows symptoms which call for a careful examination.

Children should receive most careful consideration, for only in them can we hope to correct bad tendencies. And we cannot begin the training of children at too early an age. During the first four or five years the child develops in physical, mental and social directions. He develops muscular co-ordination, learns to sit alone, to walk, to talk, to eat, to play. The sensations become acute and localized. The faculty of speech develops. He learns conscious sphincter control and suitable habits of sleep.

He gradually develops in intelligence, learning the names of things about the house and their uses, begins to understand a few abstract ideas, learns the letters of the alphabet and perhaps, learns to read.

He also begins to learn something of his relation to the people about him. He finds there are certain natural desires and instincts that he must control, because their gratification at the instant of their appearance would cause inconvenience to others. He finds that he cannot always have his own way. He learns to recognize property rights and that his games and play must be modified so as to respect the rights of others. He learns obedience, self-control, patience and kindness.

During these early years the foundation of his character is laid and the manner in which he adapts himself to his environment when he invades the world outside the home, depends very largely upon his previous development. If his muscular co-ordination is poor, he fails in games. If any one of his senses has developed poorly, he is handicapped. If he is slow to learn, he falls behind in his classes. If he is not learned in the ways

of give and take in play, he is constantly in trouble.

Nervous symptoms in children are much more common than is generally recognized. Children who sleep poorly, who are irritable and peevish, who suffer from night terrors, who wet the bed, who learn slowly, who are oversensitive, are often of an unstable temperament.

One of the most common forms of nervousness in children is over-activity of mind and body. The minds of these children are teeming with ideas, causing them to indulge in all sorts of day-dreams, romances and fabrications. Some of them have night terrors, some walk in their sleep, or play out their games in their sleep. They are irritable, fretful and over-sensitive. They are hard to control at home and in school. They are impatient and easily lose their tempers. They are constantly in motion, mischievous, pranking and playing jokes. They may develop motor symptoms, such as shown by tics, habit spasms, gestures, twitching of the hands and feet, blinking of the eyes, picking the nose, biting the fingernails, and others.

The detection of these early tendencies devolves to a large extent upon the family physician who has a great privilege as well as a great responsibility. It is he who has the opportunity to know the hereditary tendencies and the environment of these individuals. The psychiatrist usually does not have an opportunity to see the early development of the neuroses or psychoses. He sees the case only after it is well developed.

The slowly developing depression, the insidious change in moral character or judgment, the development of seclusiveness, do not usually attract attention until some unusual act, such as the attempt at suicide, or something which offends modesty, calls attention to the mental illness. It has been said, mental illness is the failure on the part of the individual to adapt himself to the demands of his environment. Oftentimes the environment has to be adjusted to the individual. Called to the home per-

haps to treat some other member of the family the physician can note the surroundings and can study these mal-adjustments. It may be that he will wonder why the father is so gruff and unsocial and speaks to him only in monosyllables. That father may be developing a depression and later attempt suicide. He may find a fond, but misguided mother, so proud of the parlor accomplishments of little Johnnie or Susie that she keeps the child in a state of perpetual excitement, by "showing them off," or by insisting upon high examination grades. She does not realize that this very brilliancy may indicate nervous and mental instability and may be the product of a too rapid evolution, which in the end may bring about a rapid and early decay. He may find the mother so engrossed with her own pleasures, card parties, theatres, moving pictures, and joy rides, that the children are neglected and forgotten and deprived of that sweet, sane, maternal care so essential in the training of children.

Chapman has said, "The psychiatrist can play but a small part in the prevention of mental diseases. The family physician can accomplish much. He has ever been the friend, the father-confessor of the family and always will be. This is the field of greatest possibility in preventive medicine."

The prevention of mental disease should command the attention of all who are in any way interested in the future welfare of the country. The parent, the teacher, the minister, the psychologist, the social worker, the judge upon the bench, as well as the physician, should study this problem to the end that all may work together toward a better mental condition of the nation, a happier and a more contented people, a people better able to cope with the everchanging conditions of life which is becoming more and more complex, and making ever-increasing demands upon the nervous and mental strength of the individual.

SANITARY PRIVY IN DISEASE PREVENTION.*

By A. J. Ellington, M.D., Goldsboro, N. C.

Let us first define the terms used in the subject of this paper. It is always well to understand just what we are dealing with. However, I do not promise to stick closely to this subject. At best, it is an unsightly subject or perhaps I should say an unsightly object.) I have used the term Sanitary Privy herein to mean a practical, fool proof toilet or privy—the essential features of which are as follows:

A pit, vault, pail or tank for the reception of excreta until properly disposed of. This receptacle must be protected from flies and other carriers of disease germs. The lids should be self-closing, tightly fitted and durable. Unless a water proof receptacle is used, the location should be at a distance and down slope from water supply. Economy of construction and ease of maintenance must be considered, if widespread installation with subsequent proper care is to be expected. Lastly, but very important, is the feature of comfort and convenience. If the privy is not comfortable and is located a long distance from the house, many abuses as well as non-use will occur.

To better understand the term sanitary privy, let us consider its opposite and ask the question, "What constitutes an insanitary privy?" The question is well answered by Special Bulletin No. 178 of the State Board of Health, as follows: "It is best exemplified by the open surface privy, which is very commonly used in our state. In this type of privy, which is usually open in back from the seat to the ground the excreta is deposited upon the surface of the ground, where it can be

*Read by Dr. A. J. Ellington, Health Officer, Goldsboro and Wayne County Health Department, at the annual session of the North Carolina Public Health Association, Asheville, N. C., April 16, 1923.

reached and scattered about by flies, birds, domestic fowls and animals, and with every rain may be washed into the open well or spring, or into the adjoining garden, where vegetables become contaminated with the human filth. It is little wonder, then, that we have typhoid fever, diarrhea and dysentery, when we eat vegetables contaminated with human filth, when our wells and springs are polluted with it, and when the food upon our tables is accessible to flies that were bred and bathed in the human excreta of our own family or of diseased neighbors. Therefore the open surface privy, which violates every law of sanitation is a nefarious institution in any community, and must be entirely eliminated.

It is very strange, characteristic of human nature, that a great many people are utterly indifferent and refuse to accept responsibility in the protection of themselves and their communities. To educate and convince them to install sanitary toilet facilities, without recourse to the law, is a Herculean task. They dislike radical changes and abhor modern ideas or else make it convenient to plead poverty.

The open back closet, the most popular type of unsanitary privy, is a dangerous and yet a time honored institution.

"When memory keeps me company and moves
to smiles or tears,
A weather beaten object looms thru- the mist
of years,
Behind the house and barn it stood, a half a
mile or more,
And hurrying feet a path had made, straight
to its swinging door.
Its architecture was a type of simple classic
art,
But in the tragedy of life it played a lead-
ing part."

"We had our posy garden that the women
loved so well,
I loved it, too, but better still I loved the
stronger smell.
That filled the evening breezes so full of
homely cheer,
And told the night o'er taken tramp that
human life was near."

"All day fat spiders spun their webs to catch
the buzzing flies
That flitted to and from the house, where
Ma was baking pies."

The entire poem by James Whitcomb Riley cannot be quoted here. Complete copies of this classic may be had upon application.

An exhaustive description of the varieties of sanitary toilets and privies cannot be given in the scope of this paper. Special bulletins of the State Board of Health furnishes very comprehensive details and specifications of the approved types. It is well, however, that the different types commonly in use be briefly mentioned with a few remarks upon personal observation, and also the opinions of accepted authorities.

1. The sewer system. This is the ideal arrangement and should be installed wherever possible.

2. The septic tank, embodying the L. R. S. principle of automatic bacteri-
acidal and liquifying action, is nearest approach to the sewer system.

3. Chemical toilets are very useful, and with proper care, are very satisfactory for installation in rural school buildings.

4. The box and can system is theoretically an ideal arrangement, but practically it is a failure. Overflowing and leaking cans, broken lids, careless scavenger service and the problem of ultimate disposal of the night soil, have caused many towns to abandon this system.

5. The earth pit privy is the simplest and, in rural communities, by far the most widely used of all the types of sanitary privies. Its prototype was originated by Moses and extensively used by the Children of Israel (Deuteronomy, Chapter 23, verses 12 and 13). Moses, the great Law Giver, realized the danger of soil pollution and enacted regulations to control the nuisance. The pit is fool proof and easily maintained. In most places in North Carolina it may be used with safety. In low, wet localities its modification, the concrete vault, may be substituted.

Dr. I. J. Kligler, of the Rockefeller Institute, has recently completed two years of very interesting field observation and valuable experimental study of privies and polluted soil. He concludes that in moderately compact clay, sand clay, or sandy soil, free from cracks, the possibility of the subsoil pollution of the ground water is negligible, provided the ground water level is more than 10 feet below the polluted area. He also found that typhoid bacilli survive in excrement under various conditions only 10 to 30 days and, further, that they spread neither laterally nor otherwise through the soil, unless carried mechanically by water. Soil tests showed that pollution may extend five feet from the pit and that the vertical distance between the pit and ground water level is far more important than the horizontal distance between pit and well. Apparently, therefore, most pollution in wells, in soils above mentioned, is due to surface pollution.

In defining the second term of the subject "The Sanitary Privy in the Prevention of Disease," it is well to state that my procedure will be to recall, briefly, a few important facts known to most public health workers.

Recognizing the importance of sanitary toilets and privies in the prevention of disease, the state legislature of 1919 enacted a law to prevent the spread of fecal borne diseases. This law states, in part, that every residence located within 300 yards of another residence shall be provided with a sanitary privy or toilet facilities, which shall meet certain requirements. The Bureau of Sanitation and Engineering of the State Board of Health is charged with the enforcement of this law, and already, much progress has been made.

The fight against fecal borne diseases has prevented innumerable cases of sickness and thousands of deaths from typhoid and para typhoid fever, cholera, dysentery, hookworm disease and diarrhoea or "summer complaint." Vaccination alone cannot be given all the credit for this saving of suffering and life. Sanitation played its part.

There remains much work to be done in the enforcement of the Sanitary Privy Law, and an important factor in this work is to educate the general public in the knowledge we already have and to convince all classes, especially the owners of houses for rent, that insanitary toilet arrangements seriously affect the entire household, the neighbors and the whole community.

As previously stated, the exact relationship between the Sanitary Privy and infectious diseases is largely conjectural. The potential or actual danger involved in the use of one or the other type is also a matter of guess work. Many of the illnesses from the so-called "fecal borne diseases" are undoubtedly traceable to other sources, such as nose and throat discharges or water, food or milk contaminated, otherwise by human excreta from insanitary toilets. However, we have proof positive that in localities, where there is a uniform installation of sanitary toilets or privies, the intestinal diseases are very well controlled. These diseases are far less prevalent in large cities than in rural sections and recognized authorities agree that the difference is due, in a large measure, to better methods of excreta disposal in the modern cities.

Visit the average small town or rural community and dine at an average home. Note the number of flies on the table and then investigate the toilet facilities. You wonder that any member of the household has escaped. A fly is an interesting creature. In order to take food into his stomach he must first spit on it, stir the mixture thoroughly and then suck it up. He makes no choice of where that food is found. He may breakfast in the insanitary privy and take lunch in the dining room.

The Bureau of Vital Statistics of the State Board of Health, reveals the fact that every year approximately 2,000 deaths occur in North Carolina from typhoid fever, dysentery and the diarrheal diseases of infants and that approximately 35,000 cases of sickness occur annually from these same diseases. It is very noticeable that the rate from

there diseases varies directly from the negro population and the rate is much higher in rural sections. In 1920 the rural death rate for typhoid was nearly double the city rate. As long as the typhoid, dysentery, and hookworm carriers are abroad the improper disposal of human excreta will play a leading roll in the transmission of these death dealing diseases.

In Wayne County in 1920, 46 babies died from enterocolitis and 10 adults from typhoid fever. We were able to show a little better record last year with only 20 babies dying from enteritis and three deaths from typhoid. Figuring the typhoid mortality rate at 10 per cent, there were only 30 cases in 1922, instead of 100 as was the case two years prior. Vaccination, of course played a large part in the reduction of deaths from typhoid, but it must be borne in mind that only a small per cent of the population are regularly vaccinated every three or four years. It is also significant that along with the decrease in the death rate from these particular diseases in Wayne County, the general death rate has been lowered from 17.7 in 1920 to 16.3 in 1922. More widespread sewer connections and better rural sanitation must be given due credit.

The field of preventative medicine now covers the following units of work:

1. Control of contagious diseases by vaccination and quarantine.
2. Control of venereal diseases.
3. Medical inspection of school children.
4. Anti-tuberculosis work.
5. Mosquito and malarial control.
6. Protection of water supplies.
7. Dairy and food inspection.
8. Control of tuberculosis in cattle.
9. Infant and maternal hygiene.
10. Hygiene of the school child.
11. Adult hygiene, including a thorough physical examination.
12. Sanitation, the most important phase of which is the proper disposal of human excreta.

Each of these units of work has its value and contributes to the betterment of health conditions, but, in many com-

munities, the newer and more attractive fields of activity have outgrown and displaced the real backbone of preventive health work, namely sanitation. The dairy inspector may spend hours upon hours of his efforts to induce a dairyman to use better equipment and all the while an insanitary privy stands nearby unmolsted.

The modern health crusade, with its very effective methods of teaching personal hygiene, has been inaugurated in many schools, which, at that very time, have open-back privies or no toilet facilities at all.

In closing, I wish to emphasize four points:

1. Diseases known to be fecal borne are still widely prevalent in North Carolina.
2. These diseases are being controlled where sanitation is applied.
3. That not only is the death rate lowered from fecal borne diseases but the general health of the community is improved and the general death rate is materially lowered, in the community that realizes the importance of the Sanitary Privy in prevention of Disease.
4. That the fight against fecal borne diseases should be renewed with increased vigor, especially in the rural sections of North Carolina.

NACOTIC DRUG ADDICTION DISEASE.*

By W. C. Asheworth, M.D.
Greensboro, N. C.

The subject of narcotic drug addiction disease is one that has confronted the medical and lay minds for almost time immemorial. The apparent innate craving of the human race for some sort of stimulant dates back almost to pre-historic ages. The Bible and sacred literature are full of narrations of history of Kings, Queens, and other notable characters in Bible history, who have indulged in stimulation to increase buoyancy

*Read at the Asheville meeting of the N. C. Medical Society, April 17, 1923.

of spirit and obtain oblivion from the stress and strain of life. Byron speaks of having "Drank of the cup of pleasure to its dregs," also, his bibulous propensities have been the subject of much discussion among his contemporaries and friends.

Narcotic drug disease, however, seems to have originated primarily with the Chinese, since which time the habit has ramified, to a large extent, every civilized nation on earth. In all countries, in every climate, among all tribes and races, man has learned the action of certain vegetable and mineral drugs, and classified them according to his experience with them. The drug which is most lethal, or poisonous, which carries with it the possible sting of death, has ever attracted the human race. Man has ever flirted with temptation, but regretted her embrace. Drugs possessing habit forming properties have a peculiar seductiveness that but few persons can withstand after having become acquainted with their action. In small doses the thought centers and faculties of ideation seem to be increased; fancy, for the time being, set free, contributing a joyousness and careless freedom which the wearing cares of the daily struggle for existence cannot hamper, nor suppress. In larger doses, which inevitably follows, the narcotic influence becomes more marked; co-ordination is impaired, and relationship with the world at large is disturbed to such an extent that the victim exists in a dreamy self-centered world state, the return from which is disturbing and irritating. After a varying period of indulgence the unfortunate finds himself in the embrace of the enslaving drug, and, because of the accompanied impairment of volition, soon admits, to himself at least, that he has become hopelessly ensnared in the meshes of habit, and that assistance will be needed in order to enable him to secure freedom.

The prevalent belief that the use of narcotic drugs is confined largely to the unwashed element, or flotsam and jetsam of society, is not well founded. It has been my observation that the erudi-

tion of the individual does not give him or her immunity from the use of narcotic drugs. The disillusionment of the lay and professional mind of the above belief is of importance for the reason that we will take more interest in this class of cases if we recognize the truth that all classes are subject and an easy prey to the insidious action of narcotic drugs. We are all inclined to regard the drug user as a wilful pervert, and completely devoid of the fundamental elements that enter into the real man or woman.

I speak of narcotic drug disease purposely in order that our nomenclature may be changed in respect to designating every drug user as a "dope fiend," which is equivalent to a stigma that is not easily removed. It has been my observation, from long and painful experience, that they are suffering from a distinct clinical entity, and that the habitual use of narcotic drugs produces certain physical changes, irrespective of pathology, that constitutes narcotic drug disease. The lack of this knowledge makes it unfair to the drug user, since it deprives him many time of scientific and skillful treatment, which he rightly deserves and must be given if a cure is obtained. The symptomatology of drug using is complex, and many times it is hard to differentiate from some existing malady independent of the effects directly traceable to the action of narcotic drugs. I am convinced that every drug user is a sick man or woman regardless of the condition of the person which existed prior to the formation of the habit. It is an inescapable fact that a certain impress is left upon the drug user that cannot be entirely effaced though the patient may be cured of the habit.

The psychology entering into the average narcotic drug case is both interesting and instructive, and must be reckoned with if satisfactory results are obtained. It is true that the narcotic drug patient is hyper-sensitive, and, therefore, the treatment is greatly reinforced by psychotherapy and strong mental suggestion. We must not, however, overlook the fact that narcotic

drug patients have real physical discomfort, which must be intelligently remedied by proper and well selected remedial agents. It is necessary to have almost limitless patience with this class of cases, since we cannot always tell when the patient is malingering, or in real need of some pain relieving drug.

The auxiliary treatment of drug addiction cases is highly important, since it appeals both to the physical and mental side of the patient. We can, in many instances, by securing the confidence of the patient, save ourselves as well as the patient, the prescribing of drugs that hinder, or, at least, greatly prolong the successful treatment. If we once fully realize the fact that this class of patients are in need of active and aggressive treatment we will be in a position to better serve them during the ordeal of the final withdrawal of the narcotic drug.

The treatment of narcotic drug disease should not be undertaken unless the patient is confined in an institution, therefore under the immediate observation of the physician in charge. It has been my experience that no routine method can be followed successfully in the treatment of narcotic drug cases. In fact, the treatment should be outlined after a careful and painstaking examination of the patient. If the physician cannot depart from a routine method in the treatment of his narcotic drug cases failure and disappointment are inevitable. We must give due consideration to the personal equation, temperament and idiosyncrasies of our narcotic drug patients if satisfactory results are obtained.

If the Gradual Reduction Method is selected the reduction must be very tentatively made in order that the nervous system of the patient may not be unduly shocked on account of the sudden deprivation of the drug. It is an established fact that no scale of reduction for a drug patient is applicable to all patients alike. If a patient, on account of a too rapid reduction, or sudden withdrawal of the drug, suffers acute withdrawal symptoms the ultimate success

of the treatment is hampered, and the patient disarmed to make a successful fight for freedom.

It has been my observation that comparatively few drug addicts have formed the habit from dissipation per se, but on the other hand a major per cent of them have suffered from some painful disease which has necessitated the prolonged use of the drug, which, in most instances, has been administered by the physician in charge in the best of faith, with no intimation that the patient would become a confirmed narcotic drug user. It is true that the neurasthenic, psychasthenic, or neuropathic individual is unduly susceptible to the tranquilizing effects of narcotic drugs.

It is absolutely useless, of course, to undertake to cure the narcotic drug patient who is suffering from some painful disease, whether it be functional or organic. It has always been my practice to ascertain, if possible, the underlying cause, whether physical or mental, responsible for the formation and perpetuation of the habit. It is, also, of the greatest importance to ascertain and correct faulty environmental conditions, which militate against the convalescence of the drug patient. I have always maintained that any treatment for the narcotic drug disease is comparatively futile unless the patient can break away from the life situation which contributed to the development of the habit of drug using. We must, also, reckon the psychical side of the treatment, which plays a very important role in the successful ending of the treatment. I cannot stress too emphatically the importance of gaining and retaining the full confidence of the patient, without which any treatment will be an absolute failure.

If I have succeeded in arousing the slightest amount of interest in the narcotic drug problem, which is now agitating almost every nation on earth, I will feel amply repaid for the time spent in writing this short article.

In the language of the poet, which is a confirmation of the old adage, "He

who disobey must pay."

"The tissues of the life to be,

We weave with colors all our own,

"Till in the fields of destiny,

We reap as we have sown."

ELECTRIC LIGHT AND POWER BONDS—A GOOD EXAMPLE OF THE THINGS THAT MAKE AN INVESTMENT WORTH BUYING.

By Samuel O. Rice,

Educational Director, Investment Bankers Association of America, 105 South LaSalle Street, Chicago, Ill.

This article comes right down to specific classes of bonds and endeavors to convey essentials in what investments to buy and why to buy them. Electric light and power bonds of sound, well-managed companies are among the safest and most desirable investments. The reason they are so is because the demand for electricity is greater than the electrical industry can supply, although electrical companies are annually putting more than a billion dollars a year into extensions and improvements of their plants and transmission lines.

The foregoing is only one of many sound reasons why the electrical field is so desirable for investors. There are many others. But don't misunderstand me to say that all electric light and power bonds are good buys. That is not true of any class of investments, commodities or property. The investor should have dependable information that the bonds he buys are those of sound, well-managed companies. He should know that the general field or class he contemplates investing in is sound. Electricity can sell more of its product than it can produce and the demand is constantly increasing. There is no substitute for electricity. But all electrical companies are not well-managed or conditions in some locality may make it difficult for a company to succeed although it be engaged in one of the most prosperous lines of business in the world.

Sales of electricity by central stations

in the United States will run close to \$1,300,000,000 this year. The very reliable Electrical World makes that estimate. The total sales of electricity for the first six months this year were \$649,300,000, which was 19.5 per cent more than the \$542,000,000 received in the first six months of 1922. In the first six months this year electrical companies issued in excess of \$600,000,000 in stock, bonds and notes to obtain capital for extensions and betterments of generating plants and transmission lines. As I said, electrical companies are putting more than a billion dollars a year into extensions and improvements in an effort to keep up with the demand for more and more electricity.

Where is all this demand for electricity coming from? Is it sound? Will it last? Those are pertinent questions. Let us consider the three great markets that buy electricity. These three are electric lighting, electric railways, and electricity for power uses in industry, in mills and factories. The greatest demand for electricity is from the industries, although many persons erroneously believe that the greatest market for electricity is for lighting homes and streets.

There were 24,351,676 homes in the United States when the 1920 census was taken. Of these only about 8¾ million homes are lighted by electricity. That leaves a great number of homes yet to be lighted by electricity. Of these, a large number are included in about seven million farm homes, but quite a few millions of homes without electricity are city and town homes and daily many of them are becoming electricity users. Homes having electric lights generally have greatly increased their consumption of electricity by more artistic and better lighting. Bridge lamps and several colorful table lamps are common in almost every living room and parlor where a few years ago one single electric globe sufficed. The number of electric lights has been increased in every room in every modern home, be it bungalow or mansion. Added to this increase in illumination is the use

of electricity for cooking, for operating machines and other home appliances and for ironing.

Electricity was first most largely used for lighting. Then electric railways developed and became the greater market for current. Today, however, factories and mills that use current for power are the greatest market for electricity. It is a tremendous new development that the public knows little of. I know one industrial plant whose electricity bill runs close to \$35,000 a month.

But there is still another development in the electrical industry that every investor and prospective investor should appreciate. It is "super-power," the interconnection of different electricity companies so that the greatest economy and efficiency in producing and distributing current can be brought about. A few years ago this interconnection was impracticable because the industry did not know how to handle high voltages economically. Current is most cheaply transported on high voltage lines. Improvements, largely in insulation, have made it practicable to transport high voltages economically considerably more than a hundred miles and thus greatly increase the efficiency of generating plants. A few years ago, no matter how much current it could produce, a plant was limited in its "output" because it could not transport electricity a long distance. Now all that has been worked out and interconnection between plants hooks up many states.

It is impossible to portray in this short space all the great picture of "super-power" and interconnection. One little advantage of this development will indicate its great importance and usefulness. Water power electric plants usually have two extremes in production of current. Low water and flood may both cut down the current production of the hydro-electric plant. In such a situation a hydro electric plant might not be able to serve all its customers. In many cases interconnection solves that difficulty. The current simply is drawn from some steam power electric plant perhaps a hundred or more miles

away. Likewise, when the water-power plant is operating at full capacity the distant steam plants can cut down on the use of coal by drawing current through their interconnection with the water-power plant.

I mention only a few salient points to indicate the sound field of the electrical industry. Any business that has as large usefulness and demand cannot but be fundamentally sound. Would I advise physicians to buy electric light and power bonds? I wouldn't advise anybody to buy anything. Every man's investment requirements are different from those of every other man, or woman. A person's income, obligations, dependents and many other conditions should be carefully considered and his investments be made to fit that situation. I write this only to suggest that anyone with something to invest consider the electrical industry. There are other utility bonds and industrial bonds just as safe and desirable as the best electric light and power bonds. All should be considered and the investor should keep their characteristics in mind so that he may diversify his investments, not put them all in one enterprise. My suggestion is not to buy electrical industry bonds, or any bonds or stocks without first consulting an honest, established dealer in securities. It is the greatest essential in making sound investments.

LAWRENCE HOSPITAL CASE NO. 2214, WINSTON-SALEM, N. C.

White woman, age fifty-seven was admitted to hospital 11-25-23, with the following history. Chief complaints: Attack of frequency, nocturnal in character, with dysuria and tenesmus, associated with hematuria. History of present illness: Has had present symptoms for several months. Has been much worse in last two months, getting up eight to ten times at night to void. Would pass only a few drops of urine, frequently blood-tinged, no pain in back. Has night sweats, and has lost about

eight pounds in weight during last six months, no haemoptysis, has slight cough. Family History: Two sisters died of T. B., otherwise negative.

Past History: Has had pain in epigastrium for several years, coming on after ingesting food, though at no definite time. Pain is relieved by belching. Flu two years ago which exaggerated the kidney symptoms. Menstrual history normal.

Physical Examination: Well developed adult, female, fairly well nourished, Mucous membranes pale. Has several decayed teeth, gums diseased. Tonsils submerged. Lungs: Both upper lobes dull on percussion, increased vocal fremitus. Many fine rales over apices, more marked on right side. Heart: Normal. Abdomen normal. Some tenderness posteriorly on fist percussion. Kidneys not palpable. Vaginal examination normal. Blood pressure, systolic 110, diastolic 70.

X-Ray Examination: Both lungs show extensive fibroid phthisis of both upper lobes. On right side, apex is markedly infiltrated, middle lobe on right also involved. No cavities seen. X-ray of kidney region normal.

Laboratory: Twenty-four hour specimen shows the urine to be acid, sp. gr. 1013, albumen 1, pus 4, scale 4, red blood cells 1, scale 4.

On 11-29-23 blood count shows 70 per cent hemoglobin with 9,000 polys.

11-26-23. Cystoscopy was done revealing two ragged punched out grayish ulcers near right ureteral orifice. Bladder mucosa highly congested, capacity 55 c.c. Catheters were passed to both kidney pelves and specimens obtained. Many tubercle bacilli were found in specimen from right kidney with many pus and red blood cells. The left side was normal. 1 c.c. of thalein was given intravenously with 15 per cent output from left side in fifteen minutes. On the right side only a trace was seen after thirty minutes. Another thalein test given intramuscularly on 11-28-23 shows 45 per cent return first hour with total two hours excretion of 55 per cent. Blood urea was done

12-2-23, with 45 mgm per 100 c.c. Patient was advised to have the right kidney removed to eliminate the T. B. focus.

Operative Record: Dec. 3, 1923, under spinal anesthesia, the right kidney was removed, pedicle isolated and ligated en masse. The ureter was very hard like a pipe stem. It was divided with cautery and sutured to skin to prevent contamination of the incision. The wound was closed in layers with one cigarette drain to stump of pedicle. Section of kidney made following operation, shows many large tuberculous cavities with various stages of tuberculosis present. Many conglomerate tubercles were seen. The kidney pelvis was lined with a pyogenic membrane and communicated with several of the cavities.

Convalescent Record: The incision healed per primam except the drain site which rapidly closed by granulation. On 12-28-23 patient was discharged cured. General condition excellent with no burning nor frequent urination. Letter from patient three weeks later says she is feeling very well, gaining strength rapidly, appetite good, no frequency nor burning on urination.

Conclusions.

This patient had bilateral pulmonary tuberculosis with involvement of the right kidney. This occurs in from 15 to 20 per cent of all cases of T. B. of other organs. T. B. of the kidney is



unilateral in about 90 per cent of the cases excepting those of acute miliary T. B. It has been estimated that at least 3 per cent of all cases coming to autopsy show tuberculosis of the kidney, showing that we must be constantly on the lookout for it. It is a surgical condition, requiring early removal if unilateral, to give the patient the best results. At least 60 per cent of permanent cures may be expected if the condition is recognized and treated early. Any patient with persistent nocturia with pain in the back, dysuria and hematuria which does not respond to the usual cystoscopic measures should be treated as tuberculosis, unless proven otherwise by a careful urological examination. Very frequently removing an active process in the kidney will cause a marked improvement of the patient's general condition. Tuberculosis of the bladder is an extension from the upper urinary tract, and usually heals rapidly after eradicating the focus.

Follow-up Results of 908 Cases of Uterine Cancer Treated By Radium.

On page 402 Volume of 1923 in the American Journal of Obstetrics and Gynecology Drs. H. Bailey and W. P. Healy give their experience which is that:

In the cases of advanced primary cancer of the cervix there was very little chance of obtaining a cure under any circumstances. When treatment was undertaken, not only the cervix but also the parametrium was involved. These cases formed the largest group. Of the eighty patients treated in the years 1915-1917, when radiation was done without much cross-firing, only two are still alive. Of forty-one treated in 1918, when the bomb and block were used, six (14.5 per cent) are alive and free from disease today. Of sixty-nine treated in 1919, only seven are still alive, and in two of these the disease is progressing. Of the ninety-two patients treated in 1920, fifteen are living, but seven have symptoms. Of eighty-five women treated in 1921, twelve (14 per

cent) are still alive and well and nineteen are in various stages of the disease. Of the eighty treated in 1922, twelve (15 per cent) are apparently well and forty-five are living but not well. While not enough time has elapsed since the treatment given in the last two years to warrant conclusions as to the final results, it may be stated that of the 165 women who were beyond the aid of surgery, twenty-four now show no clinical evidence of cancer.

In the first five years thirty-three women with borderline cervical cancer were treated; eight of them (24 per cent) are still living; and all but one of them are known to be free from evidence of the disease. Of the fifty-one women with this condition who were treated during the last three years, twenty-two (43 per cent) are free from signs of cancer and fifteen show the presence of tumor tissue.

The early operable group included eleven women who were treated previous to January, 1919. Of these, three (27 per cent) are alive and free from evidence of cancer at the end of five years or longer. If three deaths due to intercurrent disease and one following operation in another clinic are deducted, 43 per cent of the cases were clinically cured. In the last four years forty-eight women were treated. Of these, thirty-two (66 per cent) are free from evidence of the disease. If three are deducted—one who died after an operation in another hospital a week after treatment and two others who could not be traced—thirty-two (71 per cent) of this group are still alive. In early operable cases excellent results are expected from irradiation and other treatment is seldom given. However, as there seems to be no doubt that hysterectomy alone has cured cases of cancer of the cervix, it is sometimes performed, in favorable cases, several weeks after full irradiation. Just how much is to be gained from this is still a matter of conjecture.

Of fifty-two women with recurrent cancer who were treated previous to 1918, two are still alive and well and another is alive but with some evidence of tumor. In the past five years, during which time the technique has been considerably elaborated by the use of cross-firing and the embedding of radium emanation in the lesion, a remarkable number of these cases have been apparently cured. Of the 168 women in this group, thirty-eight (22 per cent) have no clinical evidence of cancer.

Of twenty-nine women subjected to hysterectomy in the period from 1917 to 1923, twenty-one (72.5 per cent) are alive and free from signs of recurrence and five of these have been well for five years.

SOUTHERN MEDICINE AND SURGERY

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M. L. TOWNSEND, M. D.

J. C. MONTGOMERY, M. D. } *Editors*

CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

Greenville Meeting.

Those who could not attend the Greenville (S. C.) meeting of the Tri-State Association really missed a treat. Perhaps no meeting of the association has ever been more genuinely helpful than was this one. Every paper on the entire program was of the very highest quality and thoughtfully suited to the times and the occasion. The Greenville doctors, the hotel management and the Greenville citizens actually made all visiting doctors feel welcome. Just really welcome without formality, fuss or ado of any sort.

The purpose of the meeting was for the hearing and discussion of scientific medical papers. The spirit of the meeting was mutual, neighborly, helpful.

The keynote of the President's address was a plea for whole hearted patriotic alignment of the profession on the side of right and for the medical men to join the reserve corps. Following his address, General John R. Delafield, President of the National Reserve Officers Association, made an eloquent appeal, using facts and logic to prove the great national need at the present time. Later during the meeting Major Jones, from the Surgeon General's office, explained in detail the need of the nation for more Reserve officers in the Medical Department and also all of the requirements for obtaining commissions. The President's address and Major Jones' paper are published in full elsewhere in this issue.

Southern Medicine and Surgery wants to urge every doctor in these three states, who is eligible, to send in application now—at once. There is no way in the world today that these states can more emphatically prove to the rest of the nation and to the whole world, our true blue American spirit than by leading all other sections in the high percentage of her medical men who stand willing, ready, trained and organized to resist any insults to the flag we love and the principles we and our fathers have fought for.

The Tri-State Medical Association has for its members the very best doctors in the purest American section of the United States and this association will not be living up to the prestige its members have set if it does not now show the highest percentage of its members as belonging to the Officers Reserve Corps.

The next meeting of the Association will be held in Richmond, Va.

Officers elected are:

President—Dr. F. M. McLeod, Florence, S. C.

Vice Presidents—Dr. Garnett Nelson, Richmond, Va.; Dr. C. N. Lawrence, Winston-Salem, N. C.; Dr. E. W. Carpenter, Greenville, S. C.

Councilors—Dr. W. B. Porter, Roanoke, Va.; Dr. F. B. Johnson, Charleston, S. C.; Dr. E. S. Boice, Rocky Mount, N. C.

North Carolina Medical Society.

The Medical Society of the State of North Carolina will hold its seventy-first annual session at Raleigh, April 15, 16 and 17, 1924.

Perhaps at no time in the history of our country has the need for honest, altruistic patriotism been greater than it is at present. We are not pessimists but to cover up our heads, ostrich-like, and refuse to see the facts about us, is the basest sort of cowardice.

The loudly barking dog is not always the one to be most feared and the medical profession which in 1917 left its placid

in the furrow and, scarcely going by the house to change clothes, rushed wholeheartedly into the fray to repulse the loudly barking danger, must not, and will not, now hide its head. All then realized that Democracy was being challenged. All do not now realize that today Democracy is being challenged with even more danger, if possible, than then. Today the danger is much more insidious—today there is no loud barking—and this very insidiousness is our greatest reason for being on guard.

With communism, sovietism and bolshevism stalking the country in the guise of white robed philanthropy, crooning lullabies of pacifism to the credulous public, inducing it to tuck its head drowsily into the lap of self-contentment, while these malicious agencies undermine the foundations of Democratic government, it is time to be awake and walking post with bayonet drawn.

The North Carolina Medical Society should be awake, especially to the silent and insidious propaganda so persistently promulgated favoring state medicine, else after it may be too late we will find ourselves compelled, like the profession has found itself compelled in some other countries to bow to the dictation of non-medical men both in the pursuit of our profession and the recompense received. The day laborer may work for whom he chooses, free to go where he can earn the most. Under the communistic scheme of compulsory state medicine the doctor must go where he is sent, do what he is told and accept the recompense allowed.

With traitors in positions of trust selling our country and its resources for personal gain, with scoundrels given power to barter the health and lives of ex-service men for gold, with general unrest and discontent on every hand, the doctor of all men should see the light and stand firm for the right. As an isolated individual he can do little but as an organized society he can demand and command attention.

Every man upon whom the state has conferred the privilege of practicing

within the state has a moral obligation to the profession of that state. In these days of need he is a slacker who does not show his colors, join his local and state society and present to the world a solid phalanx, with 100 per cent present, to fight right now to maintain the liberty our fathers died to win. When the Raleigh meeting closes every eligible man should be enrolled.

Raleigh is accessible and the meeting should be universally attended and every man should come with the serious purpose of advancement. To be sure no play makes Jack a dull boy, but to fiddle while Rome burns is not in the heart of any North Carolina physician. The meeting at Raleigh will have momentous problems before it. It is a disgrace to the state to have section meetings with a half dozen present while scores are telling stories or planning politics. Now is not the time for factions and neither is it a time for a superfluity of sections. **It is the time to get together.**

Join Your County Society.

Does every doctor in North Carolina belong to his county society? He does not. How can we explain the fact that there are several hundred doctors in North Carolina who have steadily declined to join the organized medical body within their own county, or who, after joining, have for one reason or another lost membership. How can doctors calmly lose that which they should hold most dear—the privilege of membership in that most democratic of organizations, the county medical society?

If the State compelled membership as a prerequisite to practice, just as it does a license, there would be no stragglers. It is hard to believe that so many elect to stay out; it must be that many just never make up their minds to come in. Doctors are so busy with the thousand and one things that are part of the doctor's life, that many have time only for those things that they must do.

The county society is not a club or social organization, nor is it anything

like your local neighborhood society, nor any of the societies organized for special study. It is **your County Society**. It stands for civic duty; it stands for professional duty.

Are you unable to attend meetings regularly? Join anyway. Your support will be invaluable. Are the dues high? They are as low as it is possible to make them—often they do not cover expenses. Does a small group seem to manage the affairs of the society? Join them. You will be more than welcome. Workers are scarce indeed. You will probably find that small group tirelessly working for the good of all, making great personal sacrifice so that your county society may not fail in its duty to the medical profession and the public.

Join your County Society. It needs you. You need it. The same is true of the State Society.

MEDICINE

Wm. B. Porter, M. D., Dept. Editor.

Medical Treatment of Peptic Ulcer Without Alkalis

In the opinion of Anders Frick, Chicago (Journal A. M. A., Feb. 23, 1924), the chief therapeutic indications for the treatment of gastric ulcer should be: to check excessive secretion of gastric juice, to inhibit excessive peristaltic contractions as far as possible, to relieve intragastric tension and pyloric spasm, and to cause inflammation to subside. Frick pleads for: (1) A sedative and antiphlogistic treatment of peptic ulcer in cases in which no surgical complications are present. (2) The systematic and prolonged use of bismuth subnitrate "a hautes doses," as advocated by Trousseau. (3) The restriction of the use of alkalis to only those cases of peptic ulcer in which bismuth fails to relieve pyrosis. (4) The ambulatory management of those cases of peptic ulcer which are not "acute" and of those which are not complicated by marked anemia, gastric dilatation or gastroptosis. (5) The prevention of

recurrences of peptic ulcer or, in other words, for the overcoming of the so-called tendency to peptic ulcer, by the eradication of infectious foci, by the exercise of moderation in eating, drinking and smoking, and by the establishment of spontaneous evacuation of the bowels. (6) The immediate use of bismuth subnitrate, for a short fast, and for a gradually increasing diet in case symptoms of peptic ulcer should recur.

Clinical Significance of Hunger Pains.

In order to determine the relative frequency of hunger pains in the more common abdominal disease, an analysis was made by William H. Higgins, Richmond, Va. (Journal A. M. A., Feb. 23, 1924), of 162 clinical histories of patients with peptic ulcer, chronic cholecystitis and chronic appendicitis operated on over a given period. In the first group there were thirty-three cases of chronic cholecystitis. Of these, five, or 15.4 per cent, gave a definite history of food relief. In the second group there were forty-seven cases of chronic appendicitis. Of these, seven, or 17.5 per cent, showed food relief. In the third group there were thirty-four cases of combined chronic cholecystitis and chronic appendicitis. Three, or 8.6 per cent, gave a history of food relief. In the fourth group there were forty-six cases of peptic ulcer. Of these, twenty-one, or approximately 50 per cent, gave a history of food relief. The interesting feature in this summary is the relative frequency of hunger pains in gall-bladder, appendical and duodenal infections. Relief of pain by ingestion of food has been generally recognized as a cardinal symptom of duodenal ulcer, and has served as one of the most important differential points in the diagnosis of this condition. It is rather remarkable that slightly less than one half of the ulcer cases in Higgins' series gave this history. The age of the patient, duration of the illness, percentage of hydrochloric acid or roentgenologic studies apparently bore no relation to the incidence of this complaint. The

most striking variation in the operative findings was the presence or absence of adhesions. Although all patients with chronic cholecystitis showing food relief had adhesions, more than one half of those not giving this symptom likewise have the same type of adhesions. In the series of chronic appendicitis, five of the seven patients giving a history of food relief had adhesions, while thirteen of the forty patients without food relief had similar adhesions. Two cases of benign pyloric hypertrophy are reported. The one in which relief was obtained by food presented duodenal adhesions, and the other, in which there was no hunger pain, showed no adhesions. It is evident that hunger pains may arise from normal rhythmic gastric contractions even in the absence of any demonstrable lesions and that they are not pathognomonic of peptic ulcer. The most probable cause of hunger pains is a duodenal reflex resulting either from the absorption of bacterial toxins through the branches of the vagi or from a local inflammatory process in the duodenum. The presence of adhesions in the extragastric lesions is undoubtedly a factor, but is not essential to the production of this symptom.

Increase of Uric Acid in the Blood During Prolonged Starvation.

In the course of studies dealing with the chemistry of the blood of epileptic patients during starvation treatment, a marked increase in the concentration of the uric acid in the blood had been found by William G. Lennox, Boston (Journal A. M. A., Feb. 23, 1924). Observations have been made during twenty-two starvation periods, varying in length from three to twenty-one days, on nineteen subjects. Two or three were normal controls; the others were patients with epilepsy. Except for water, starvation was absolute. A marked increase in the uric acid of the blood was invariably found. In the seventeen periods lasting eight days or longer, the average increase was from a prestarvation level of 4 mg. to a star-

vation peak of 10.7 mg. per hundred cubic centimeters of whole blood, an increase of 165 per cent. In some of the cases, one factor of this increase was found to be a decreased excretion of uric acid. The uric acid retention occurred without coincident retention of non-protein or urea nitrogen in persons whose kidneys were normal by the usual tests. This finding throws doubt on the value of increased uric acid in the blood as an indication of renal impairment. Starvation provides an experimental method for the study of uric acid metabolism.

SURGERY

A. E. Baker, M. D., Dept. Editor

"Surgical Indications in Goiter."

By Dr. Austin, Ohio State Medical Journal, 1923.

The following abstract is full of working knowledge and most concrete:

Histologically, the three variations from the normal thyroid are: (1) an increase in intra-alveolar colloid, (2) the development of new alveoli, and (3) hypertrophy of the alveolar epithelium. These variations form the basis of the three main types of goiter: (1) the colloid goiter, (2) the adenomatous goiter, and (3) the exophthalmic goiter. All other types are variations or combinations.

The colloid type of goiter is seen most often in girls between the ages of 10 and 18 years. There is a symmetrical enlargement of both lobes and the isthmus, and the gland is soft and smooth. Operation is warranted only by pressure symptoms or for cosmetic reasons. The adolescent type usually disappears before the twenty-fifth year of age.

The colloid goiter is an expression of a deficiency in the amount of iodine available to the thyroid. Marine has shown that the administration of iodine often prevents or even cures colloid goiter, and he and Kimball believe that 2 gm. of sodium iodide given in 1 gr. daily doses twice a year are sufficient.

The adenomatous type of goiter is most common in the third and fourth decades of life. Examination reveals single or multiple firm masses. The symptoms due to non-toxic adenomata are purely mechanical. Toxic adenomata cause, in addition, increasing nervousness, tachycardia, dyspnoea, palpitation, tremor, weight loss, easy fatigue, hypertension, increased perspiration, and increased appetite. The wave of intoxication ascends progressively without the remissions which occur in exophthalmic goiter.

Plummer observed that the adenomatous type of goiter appears at the average age of 22 years and comes for treatment nineteen years and five months later, after the symptoms have been noted for two years and five months. The treatment is surgical if the adenoma is 3 cm. or more in diameter. Ligations are of no benefit.

Exophthalmic goiter may occur at any age, but is most common in the third and fourth decades. The course of the symptoms is somewhat acute, reaching a maximum severity or crisis at an average period of nine to twelve months from the time of their onset.

In the order of their onset the symptoms are: nervousness, vasomotor disturbances, tumor, increased appetite, tachycardia, loss of strength, cardiac insufficiency, exophthalmos, loss of weight, diarrhoea, vomiting and mental depression.

Examination reveals a firm symmetrical enlargement and, in 80 to 90 per cent of the cases, bruits over the thyroid vessels. The onset of hyperthyroidism in exophthalmic goiter is rapid and rather acute, while in the toxic adenoma it is slow and insidious. Nervous symptoms predominate in the former and cardiovascular symptoms in the latter type. In toxic adenoma there may be a stare but exophthalmos is absent.

The best results in cases of exophthalmic goiter are obtained from early operation, but surgical treatment should not be given just before, during, or immediately after a crisis.

In mildly or moderate toxic cases in

which the average metabolic rate is about 50 per cent, partial thyroidectomy may be performed. If the patient is markedly toxic, a preliminary ligation followed by a secondary ligation should be done. After about three months a thyroidectomy may be performed safely.

While the majority of thyroidectomized patients have an uneventful convalescence, there is occasionally a post-operative reaction characterized by a rise in temperature from 103 to 105 degrees F. and an extremely rapid pulse. In such cases the temperature is controlled by the application of ice bags, and sufficient morphine is given to keep the patient at mental and physical rest. A hypodermoclysis of 4,000 c.cm. of saline solution is administered twice daily. Blood transfusions give striking results.

Malignancy is seldom diagnosed pre-operatively and usually develops in a pre-existing adenoma. Surgery is indicated in the early stages, and X-ray and radium treatment in the later stages.

The causes of surgical failure or incomplete results are: (1) errors in diagnosis, (2) faulty judgment in the choice of the time for operation, (3) the persistence of cardiovascular-renal symptoms resulting from delay of operation, (4) the recurrence of symptoms due to incomplete operations, and (5) myxoedema resulting from the removal of too much of the thyroid gland.

The numerous advantages of basal metabolic readings are unnumbered.

Gynecology and Obstetrics

Robert E. Seibels, M. D., Dept. Editor

The Value of Diagnostic Excisions and Diagnostic Curettage in Gynecology.

Five cases are cited by Robert T. Frank, Denver (Journal A. M. A., Feb. 23, 1924), in substantiation of the thesis not only that exploratory excisions and curettages are justified in gynecology, but also that these small interventions are indispensable. No amount of clinical experience, sagacity and knowledge

can take the place of accurate microscopic diagnosis. Those practitioners who fear to use the scissors or scalpel in making their excision can use the cautery knife, which seals the lymphatics and tissue spaces, and thus more surely obviates the possibility of spreading cancer cells. Exploratory curettage never causes dissemination of adenocarcinoma of the corpus. Curettage may however, produce an attack of pelviperitonitis, if practiced in the presence of acute or subacute cervical or tubal infection. In Frank's experience, practitioners, including especially those "who do their own surgery," and also the "occasional operator," omit diagnostic excisions and exploratory curettages more often from a feeling of cocksureness and from ignorance of the many possibilities than from dread of disseminating cancer cells. Another serious danger to the community, in addition to the overzealous wielder of the scalpel, is the untrained "pathologist," and the lay technician. The rush of hospitals to become "standardized" has strained the output of competent pathologists to the utmost, and many half trained and incompetent individuals at present fill positions of trust and responsibility.

Marriage, Pregnancy, Parturition, and Tuberculosis.

Under this title there is an article by E. Ward, in the *Lancet*, Volume 1923, page 557.

Summarized he says that the data of investigations made among tuberculous women of the poorer classes show that marriage alone is unlikely to affect their condition, and that if it does have any influence, it is twice as apt to cause improvement as deterioration.

Pregnancy and parturition, however, are apt to make it worse; there is a 50 per cent chance of this against a 19 per cent chance of improvement. However, as only 2 per cent of the women died of exacerbations caused by child-bearing, the unfavorable influence of parturition is not often fatal.

The advisability of inducing abortion in the cases of tuberculous women seems very questionable. The results of miscarriage have not been fully investigated, but in 47 per cent of the cases studied there was no effect, in 3 per cent the patient was improved, and in 50 per cent the condition was made worse. In only 66.6 per cent did lactation appear to exert a definitely unfavorable effect.

The children of a tuberculous woman are seven times as apt to be tuberculous as those of a healthy woman. Of 290 such children investigated by Ward, 45 per cent were negative, 34 per cent tuberculous (25 per cent died of the disease), and 21 per cent were suspects. On the whole, the increased risk to the child from breast feeding by a tuberculous mother seems negligible. Thirty-five per cent of children breast-fed by tuberculous mothers were negative, while 32 per cent of bottle-fed children of tuberculous mothers were negative.

In Ward's opinion it is certain that the husband will become infected unless he is congenitally immune or already harbors a smouldering infection.

In conclusion the author states that if milk is available it is wise for the tuberculous woman to nurse the child for at least six weeks but this should never be done longer than eight weeks.

Urology

A. J. Crowell, M. D., Dept. Editor

Drs. Hinman and Morison of the University of California reporting in the February number of the *Journal of Urology* give a comparative study of the circulatory changes in hydronephrosis, caseo-cavernous tuberculosis and polycystic kidney. This report is largely a sequel and a clinical application to the human kidney of their fundamental experimental studies on the unlobed kidney as instanced in the rabbit and which they reported at the 1923 meeting of the American Association of Genito-Urinary Surgeons. At this time the authors pre-

sented an excellent roentgenographic demonstration of the progressive pathology in the kidney produced by complete ureteral obstruction. They were able to make this demonstration by studying the vascular changes at varying periods by barium sulphate gelatine injection.

"With complete ureteral obstruction early pressure is transmitted from the distending pelvis to its leaf-like calyces surrounding the interlobar vessels. These vessels soon find themselves subjected to increasing pressure as the calyx margins in distending come to them more and more. The interlobar veins appear to be chiefly affected at this early stage since sections of the formalin-hardened kidneys show collapse of their lumen even on the fourth day. A resulting hyperemia may be noted in the cortex corticis.

"The intrapelvic pressure gradually forces back the ampulla of the solitary pyramid, foreshortening the depth of the medulla. This reacts on the contained medullary "straight vessels," i. e., arteriae and venae rectae, making them tortuous. As the medulla towards the poles of the kidney is subjected to a process of stretching rather than foreshortening by the forced recession of the ampulla, the "straight vessels" at these places are elongated and laterally compressed. As distention continues the pyramid becomes compressed on its base against the renal capsule thereby implicating the parenchyma of the cortex. In this process the blood vessels running primarily in the same axis as the direction of pressure become foreshortened and accordingly tortuous. The "straight vessels" of the medulla as already noted, suffer first. They are followed by the interlobular vessels in the cortex. The cortex corticis after a short period of venous congestion becomes thinned and then obliterated by compression against the capsule. The interlobular vessels soon show marked tortuosity with obliteration of their peripheral glomeruli and a temporary increase in size of their proximal glo-

meruli—those situated toward the medulla.

"As the bloated lips of the calyces merge with the continued pelvic distention and bulge outwards, they displace the interlobar trunks. These trunks with their continuations, the arcuate vessels, now find themselves being stretched over a constantly dilating sac. Like elastic tubes these vessels as they are stretched lose the diameter of their lumen. The branches arising from them are similarly affected. By the reduction in caliber of the main trunks due to pressure and stretching there is probably a diminished flow of blood to and from the cortex, producing a partial anemia of the cortical parenchyma. As pointed out by Kornitzer, this tends to lessen the normal tissue tone and favors a relaxation which is readily taken advantage of by the process of distention.

"Owing to the peripheral pressure exerted by this steadily enlarging sac the larger interlobar and arcuate vessels become more and more attenuated and lengthened whereas their finer ramifications, i. e., interlobular branches which pursue a course radial to the source of pressure, pass from a stage of foreshortening to complete obliteration.

"Thus by a progressive dilation, the pelvis with its numerous leaflike calyces so alters its original character that the kidney becomes transformed into a thin walled sac, over and around which, course attenuated and much lengthened interlobar and arcuate trunks, sole remnants of the previous renal vasculature.

"The correlation of these vascular changes with the progressive tubular alterations in hydronephrosis is essential to a complete understanding of hydronephrotic atrophy. This preliminary anatomic study demonstrated that circulatory conditions constitutes a considerable and important factor in the process."

On the human material obtained at operation or autopsy they were able to make a similar study of hydronephrosis, caseo-cavernous tuberculosis and polycystic kidney and summarize

their findings as follows.

"In hydronephrosis the circulatory changes are produced by mechanical displacement acting by compression or stretching according to the course of the vessels in relation to the direction of force. As the larger vessels become attenuated by stretching there is diminished flow of blood to and from the cortex, producing a partial anaemia. This tends to lessen the normal tissue tone and favors a relaxation which is readily taken advantage of by the process of distention.

"In caseo-cavernous tuberculosis the factor of infection is present which not only produces changes in the vascular walls, thereby impairing the tissue vitality, but also provides the means of obstruction and creation of a secondary mechanical hydronephrosis. The secondary changes may almost completely mask the original picture.

"The circulatory changes in polycystic kidney appear to be mechanical and involving chiefly the finer cortical vessels by displacement and compression. The larger trunks show little departure from the normal arrangement. In general distribution the vasculature simulates the fetal type."

Orthopaedics

Alonso Myers, M. D., Dept. Editor

The development of paralysis in association with tuberculous disease of the spine is a most distressing complication. The complication arrests the usual course of recovery, it necessitates prolongation of the already burdensome recumbency, and in spite of treatment, it may progress to the stage of irrecoverable degeneration of the spinal cord and a permanent flaccid paralysis.

Experimentally and clinically it has been demonstrated that simple angulation of the spinal cord is not the primary cause of the paralysis. The influence which induces the change is localized pressure exerted upon the cord from without, and is most frequent in

the upper dorsal spine where the lumen of the vertebral canal is narrowest.

In Kohler's opinion, one of the most potent factors in producing pressure changes is the œdema characteristic of tuberculous lesions. The result of the meningeal changes is that the spinal cord suffers a slow compression. These various changes are consistently most marked in the spinal level just above the zone of compression. It has been J. Fraser's practice to give simple conservative treatment—absolute rest in the horizontal position combined with moderate hyperextension and, if necessary, counter-extension to the head and lower extremities for a period of twelve months. If this fails, he recommends laminotomy.

With the patient in a prone position a vertical curved incision is made in the long axis of the spine, over the area of the kyphosis. The longitudinal groups of muscles are separated from each side of the spine so as to expose the posterior surface of the laminae for the extent of two laminae above and two below the site of the vertebral disease. With a specially designed laminotomy forceps the laminae are divided close to their attachments to the transverse processes. Immediately above the highest point of division and immediately below the lowest point the interspinous ligaments are severed. Nothing is removed, but the laminar division permits a slight backward displacement of the segments. The wound is closed without drainage.

Immediately after the operation the patient is placed in the prone position. After the wound has healed, he is placed in the dorsal position upon a curved Whitman frame with an oblong ring of felt under the site of operation. This is maintained for a period of six months.

Improvement is apparent within a few days after operation. Voluntary movement gradually returns, and in a surprisingly short time the limbs are capable of a normal range of motion. If care is exercised in the postoperative recumbency the recovery is complete and permanent.

Mental and Nervous

James K. Hall, M. D., Dept. Editor

Sleeplessness.

As a rule the great blessing of natural sleep is conferred upon every human being at least once in every period of twenty-four hours. Consciousness is a wonderful phenomenon, and realization of what is taking place in one's environment is a god-like quality, but every man, woman, and child, consciously or unconsciously, begs for the blessing of sleep—temporary oblivion, cessation of thinking,—that divine and comforting and terrorless approach to death itself. But sleep remains a mystery. No one knows what it is. How is it induced? The answer is not yet.

Inability to acquire sleep adequate for the individual need is a misfortune. That state might be defined as sleeplessness. To be awake when one should be asleep constitutes sleeplessness. To be awake and to be worried because one is not asleep is insomnia. Sleeplessness is relatively harmless; insomnia is hurtful.

In the American Journal of Psychiatry for January, 1924, an article on "The Control of Sleeplessness" is contributed by Dr. Ross McC. Chapman. He presented the thesis before the meeting of The American Psychiatric Association at its meeting in Detroit in June, 1923. Dr. Chapman is the superintendent of The Sheppard and Enoch Pratt Hospital near Baltimore. He has had wide experience with nervous and mental patients, his observations are worth-while, and he writes well.

He thinks it is natural for one to secure sleep. Inadequate sleep is an indication that something is wrong in the individual's environment, body, or mind. It is the duty of the physician to find out what the disturbing factor is which causes sleeplessness, and to remove it, or lessen it. A searching, common-sense, thorough investigation should be made of each case of insomnia. The

surroundings should be surveyed with reference to disturbing noises, lights, odors, dirt, safety, ventilation, temperature, room-mate or bed-mate; the bed should be examined with reference to quality of spring, mattress and bed-covering. An abnormal condition of the body may cause sleeplessness. Over-eating, or injudicious eating, or drinking, or smoking just before bed-time are not infrequent factors in insomnia. Disordered physical health unfortunately carries with it often inability to obtain sufficient sleep. Pain drives away sleep, and a toxic, though painless condition, likewise makes sound sleep not infrequently impossible.

In the domain of the mind thoughts abide which are often enemies of sleep. When sleep would come ideas of guilt, shame, embarrassment, apprehension, doubt, terror emerge from the mental basement, or out of the attic of the memory, to plague and to harass. The result is that the mind, so fully occupied in attending to these terrible states, cannot get to sleep. Fear and sleep do not abide together. The wise, tactful, discreet, sympathetic physician quietly talks with the insomniac, finds out what lies in the mind, explains the foolishness of many of the fears, and by his understanding presence induces sleep. The very fear of sleeplessness induces it.

Physicians not infrequently make the mistake of overestimating the importance of immediate sleep. No one dies for lack of sleep. The sufferer from insomnia often needs the assurance that quiet rest in bed, without sleep, is almost as beneficial as sleep itself. An attitude of indifference about sleep will often induce it. Attention to the diet is helpful in many cases of insomnia. Elimination frequently calls for attention. The substitution of a light supper for a heavy meal is frequently followed by sound sleep. The injudicious use of stimulants—tea and coffee—and the excessive use of tobacco, probably drive away sleep more often than we realize. Lack of exercise may be a fac-

tor in insomnia; extreme fatigue may, likewise, make sleep impossible.

The induction of artificial sleep by the use of drugs, is being resorted to less and less by physicians and laymen as well. Sleep caused by a drug is really a manifestation of drug intoxication.

If changes in the environment, in the condition of the body, and in the daily routine do not remedy the sleeplessness, hydrotherapy should be made use of. When properly used it does no harm, but the application of water to the surface of the body should be as intelligently attended to as the administration of a drug. A warm tub induces sleep in certain individuals. In abnormal states of mind accompanied by marked excitement a prolonged stay—of four or five hours—in a warm tub—from 92 to 97 degrees—allays restlessness and sometimes makes sleep possible. The close application to the body of a sheet soaked in cold water is not infrequently followed by sleep. It should be preceded by a warm foot-bath, and by cold applications to the head and neck, and the body surface should be made dry after removal of the wet sheet. If the cold sheet causes blueness or other evidence of shock it should be removed.

This article of Dr. Chapman's is so filled with good, sound sense and helpful advice that it should be read by doctors engaged in every kind of practice. The American Journal of Psychiatry is such a good medical journal, too, that it ought to circulate freely amongst specialists of all kinds and amongst general practitioners as well.

State Medicine

L. B. McBrayer, M. D., Dept. Editor

Adding to the Span of Life.

At the annual meeting of the American Public Health Association in 1922, Dr. Herman M. Biggs, Dr. Lee K. Frankel and Dr. Haven Emerson, three noted health authorities, drafted resolutions among which are the following:

"Resolved, That the American Public Health Association send forth today the following statement of the accomplishments and promise of health protection:

As our governments, our social order, our religious customs depend for their strength upon the integrity and continuity of the family we may well call attention to a result of public health services even more brilliant than the astonishing sum of lives saved; namely, the addition of many years to the length of happy, healthy lives.

A civilization that can safeguard the lives of its parents and wage-earners, until the children have been launched in full physical and mental maturity upon their independent home building, has made notable progress.

Within the past seventy-five years the average duration of human life has been extended by not less than fifteen years in many of the great nations of the world.

Furthermore, the gains in length of life have been greater in the past twenty-five years than in the previous fifty. The improvement in the prospect of long life is not only continuing but at an accelerated rate.

Nor is there reason to doubt the certainty of still further great additions to the expected span of life for those people who read aright and understand clearly the lessons of science.

Using the best past experience of some of the progressive nations we can see that already an average length of life of sixty-five years can be promised to those communities who will best apply what is already well tested knowledge of health protection.

It is the opinion of the American Public Health Association that the maximum life expectation is far from having been attained, even with no further additions to our knowledge of the cause and means of prevention of disease.

By adding to scientific control of communicable diseases and the protection of infancy, the avoidance of disorders of nutrition and the degenerative diseases of middle age we may well promise

the attainment in the next fifty years of a span of healthy life beyond the scriptural idea of three score and ten.

As we now measure the conscience and effective intelligence of communities by their care of infant life, we shall in the future test the faith of our people in science, and their courage in performance, by the lengthening span of life they win for the mothers and fathers of the nations.

We, the health workers of our communities, are confident that there is nothing inherently impracticable or extravagant in the proposal we make that many nations may attain such knowledge of the laws of health, appropriate to each age and occupation, to each climate and race, that within the next fifty years as much as twenty years may be added to the expectancy of life which now prevail throughout the United States, and to this goal we dedicate the efforts of our Association as urged by our departed leader."

No one will deny that the organized tuberculosis work during the past twenty years has been a potent factor in bringing about conditions recited in these resolutions.

News Items

The Virginia State Medical Society will hold its annual meeting at Stanton, October 14, 15, 16 and 17. This announcement is made by the executive council following its January meeting.

Dr. Claybrook Fauntleroy, Dragonville, Va., age 64, died Jan. 10.

Dr. John G. Blount, Washington, N. C., died Dec. 8, 1919. An electric cross on the tower of St. Peters Episcopal church at that place has been erected in his memory and \$1,000.00 set aside as an endowment, the proceeds from which will be used for its lighting and upkeep.

Dr. P. F. J. Miller, Virginia Beach, Va., age 69, died Jan. 19.

Memorial Hospital, Winchester, Va., sustained a fire loss of about \$100,000, which was only partially covered by insurance. All patients were removed safely to homes and hotels.

Hygenia Hospital, Richmond, Va., has secured the services of Mr. W. L. Lucas as business manager. This hospital is now owned and operated by Dr. J. R. Blair and at present is undergoing a number of improvements.

Dr. Luther T. Buchanan, Jr., formerly practicing at Raleigh, N. C., has moved to Laurinburg to continue in general practice there.

Dr. S. Westray Battle, Asheville, N. C., is spending the winter in Florida.

Dr. Wiley C. Johnson, Canton, N. C., and Miss Ora Matthews, Buies Creek, N. C., were married Jan. 7. Dr. Johnson has been practicing for some time at Canton and Miss Matthews was a nurse at Asheville. A wedding trip was spent in Florida.

Dr. Ernest Jones had \$2,000.00 stolen from the safe at his private sanatorium, about two miles from Milton, N. C.

Dr. A. M. Lee, Clinton, N. C., died Feb. 11, 1924, in St. Luke's Hospital, Richmond. Dr. Lee was 84 years old and had practiced medicine in Clinton for 62 years. He was a typical old school Southern country doctor, loved and respected by all people of all ages. His one joy and object in life was to minister to suffering humanity, seemingly caring little whether he would be paid or not. In 1909 when his county society adopted a scale of minimum fees he quietly withdrew from membership and unless the state society suspends the rules at the Raleigh meeting the transactions will carry no obituary notice of one of the greatest doctors of the state.

Dr. Henry G. Turner, Raleigh, N. C., announces opening office in the Woodward Building. Practice limited to surgery and gynecology.

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Martin County (N. C.) has elected the following officers for 1924: President: Dr. J. H. Saunders, Williamston, N. C.; Vice President, Dr. J. S. Rhodes, Williamston, N. C.; Secretary, Dr. Wm. E. Warren, Williamston, N. C. Delegate to State Medical Society, Dr. J. B. H. Knight, Williamston.

Dr. F. V. Taylor, Stanley Creek, N. C., has just returned from New York, where for the past two months he has been studying eye, ear, nose and throat at the New York Polyclinic.

Fourth District (N. C.) Medical Society held its regular quarterly meeting Feb. 13, at Rocky Mount, N. C. The next meeting will be held at Goldsboro, the second Tuesday in May.

Dr. R. G. Tuttle, formerly of Walnut Cove, N. C., has moved to Winston-Salem with offices at 135½ N. Liberty St.

Dr. J. J. Clingman, Yadkinville, N. C., age 70, died Feb. 8, 1924.

Dr. J. Rush Shull, Charlotte, N. C., announces the removal of his offices to Suite Number Four, Medical Building.

Dr. Arthur D. Burnett, Greenwood, S. C., has resigned as health officer.

Dr. M. C. Horton, Raleigh, N. C., has moved to the third floor of the Masonic Temple building.

Dr. J. O. Hooper, Saluda, N. C., died Jan. 5, 1924, from pneumonia. He was 42 years old.

Dr. James W. Williamson, Hartsville, S. C., age 64, died Jan. 11, 1924.

Oconee County (S. C.) Medical Society has elected Dr. W. C. Mayes, Fair Play, as president. Dr. J. D. Verner, Walhalla, vice president and Dr. E. A. Hines, Seneca, secretary-treasurer.

Dr. John J. Post, Darlington, S. C., Health Officer of Darlington County, has resigned.

The Southwestern Virginia Medical Society will hold its regular spring meeting in Radford March 20-21. President, Dr. S. S. Gale, Roanoke; Vice-President, Dr. D. L. Kinsolving, Abingdon; Secretary-Treasurer, Dr. E. G. Gill, Roanoke. A prominent feature of the program will be a symposium on Diabetes.

Free Tuberculosis Clinics are being held throughout Wake County (N. C.) from March 3 to March 15.

Following the Acute Infections

prompt and uncomplicated recovery almost always calls for the systematic use of an efficient restorative tonic—a preparation that will place the least possible burden on the digestive and assimilative functions of the body, but will at the same time supply the support so urgently needed by weakened and exhausted tissues.

The constantly increasing number of medical men that have come to rely on

Gray's Glycerine Tonic Comp.

as a reconstructive tonic, tell beyond all question of its efficiency for the foregoing purposes. Under its use, functional activity is promptly increased, the nutrition is rapidly improved, and the defensive forces of the body are substantially raised.

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a body-builder to which he can "pin his faith" as a dependable means of promoting convalescence and hastening recovery.

A trial of this reliable tonic will show its exceptional value following the acute infections prevalent at this season of the year.

The Purdue Frederick Co.

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WANTED Transactions of the North Carolina State Medical Society for years 1865, 1877 and 1878. Will pay liberally for same. Dr. J. W. Long, Greensboro, N. C.

FOR SALE---\$12,500 Missouri General Practice, wonderful opportunity for good man, and especially one who can do surgery. Opening for small Hospital, Collections 95 Per cent. Good roads. Overwork, which has broken my health, causes me to sacrifice this splendid location for price of office effects alone—Location free. Address E. G. C. Journal.

Medical Society of the
State of North Carolina
Meets in Raleigh April
15-16-17, 1924.

Southern Medicine and Surgery

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No. 4

INTUSSUSCEPTION: REPORT OF AN UNUSUAL CASE.

By W. Lowndes Peple, M.D.,

Surgeon to the McGuire Clinic, Richmond, Va.

If one will but review the literature of this condition and read carefully such exhaustive studies as have been made by Elliott and Corscaden, King, and others, the futility of trying to add anything new to this subject will readily be seen.

So the real object of this paper is to put a rather unusual case on record, with a cursory review of the subject as a foreground, and a few practical suggestions as to the handling of such cases.

Intussusception is a telescoping of one segment of the bowel into the segment below it. Any part of the intestine may be the seat of it, but it is far more common in the small than in the large intestine.

It may vary in extent from a few inches to the better part of the ileum and colon. It may take place very rapidly, the inverted ileum appearing at the anus in a few hours. It may occur at any age, but is far more prevalent among infants and children than in adults.

There are many causes ascribed for it, but a large majority are directly due to hyper-peristalsis, which is induced by irritating foods, infections, or purgatives. Traumatisms, such as a fall or even just jumping a child up and down, have been known to cause it. The presence of tumors of the bowel is a very frequent cause, and especially is this true of the pedunculated variety that hangs into the lumen. They are gripped

by the peristaltic wave and carried along down, pulling the bowel wall in after them.

Elliott and Corscaden in their remarkable detailed report of 300 cases find that 100, or one-third of their series, were due to tumors, 60 being benign and 40 malignant.

In the August, 1923, Clinics of North America, Drs. Edward and Louis Morehead call attention to the very common ileo-cecal variety, and draw an analogy between the prolapse of the ileum through the ileo-cecal "sphincter" and the prolapse of the rectum through the anal sphincter, so frequently seen in infants.

The symptoms of intussusception are those of partial or complete intestinal obstruction plus tenesmus; bloody, mucous stools; and the presence in the abdomen of a somewhat curved sausage-shaped tumor.

The diagnosis may be easy or it may be extremely difficult.

Since the established presence of the tumor is almost pathognomonic, if there be symptoms of obstruction with tenesmus and bloody mucous stools it is extremely important to demonstrate its presence or absence.

A high rectal examination with the finger can be made even in very young infants, with far less difficulty than is usually supposed. Light chloroform anaesthesia should be given as an aid if needed for relaxation. Many tumors will be demonstrated in this way that would be missed on ordinary abdominal palpation.

There are numerous classifications of intussusception, with groups and subgroups; but from the standpoint of the clinician there are two—the subacute or chronic and the acute. In the first the process is slow, with exacerbations and remissions; the obstruction is not complete; part or all of the fecal matter goes through. There is time for thought

*Read at the Greneville meeting of the Tri-State Medical Association, Feb. 20-21, 1924.

and planning, and the application of well-known surgical principles renders difficult obstacles at least surmountable. But in the acute variety the whole situation is pregnant with hazard.

There is intestinal obstruction, plus partial or complete strangulation of the bowel's blood supply. If the case is in an infant the dice are all loaded against us.

If there are chronic and subacute cases, surely some acute cases must recover spontaneously or in response to treatment. It is highly probable that every tumor case has started to descend and righted itself once or many times before the final disaster takes place.

So there is a field for medical and mechanical treatment; and in every case where intussusception is even suspected remotely there is one thing we can always refrain from doing—and that is giving purgatives, which can only make bad matters worse.

There are two methods of relief that have had a fair measure of success in reducing intussusceptions of, or involving, the large bowel. They are the injection of air or of fluids into the colon. The use of air is not without danger, since it is hard to regulate either the amount used or the pressure attained. Ordinary high enemata are far safer and about as efficacious.

I have used a method in several cases with the late Dr. McGuire Newton, in which we believe we were successful in at least two cases. I first saw it described in an A. M. A. Journal a great many years ago; and unfortunately I cannot recall the name of the author. He used the inverted position in rectal examinations and colonic treatments. If we slip an anoscope in, in this position, the rectum and colon balloon out with in-rushing air; the viscera drop down against the diaphragm; and one can pour water or fluids in with a sauce-pan, and literally "drop them high up" in the descending colon. We tried this in several cases where we believed that intussusception existed, and thought that we relieved them. We have varied this by giving enemas at low pressure, instead of using the anoscope

or funnel and pitcher. I commend it as a harmless practical method which I believe to be of value.

The surgical problem is an extremely grave one. If the case is gotten early enough, before the bowel wall is seriously damaged or the mesenteric vessels are thrombosed, it can be reduced by expressing the intussusceptum by gentle pressure on the lower segment and still gentler traction on the upper segment.

But many cases present inseparable adhesions or gangrenous bowel with thrombosed vessels. We can not simply do an enterostomy as is indicated in many other types of obstruction when we wish to tide over a crisis. It is often imperative to do more or less extensive resections, and in an infant badly shocked to begin with, the outlook is far from promising.

Local anaesthesia as far as possible; the lightest general anesthesia when imperative; gentleness of manipulation; rapidity as far as it is consistent with good work; careful maintainance of the body heat, are factors which may mean very, very much in the class of case as outlined.

I have had six cases and three were due to tumors which I wish to record. The first one might be classified as a subacute case, as it was of a week's standing and the man's condition was fair. He had an intussusception of the ileum caused by a polypoid tumor the size of a walnut with a moderate-sized pedicle. The bowel was readily reduced, the tumor excised, and the bowel closed. He reacted well but several hours later his pulse and respiration ran rapidly up and he died in a few hours. I believe his death was due to pulmonary embolism, the embolus having been dislodged from one of the thrombosed mesenteric vessels.

The second was a chronic case which was under observation for some time, during which there were several exacerbations with subsequent remissions. On operation the intussusception was found to be due to a small sessile growth in the wall of the ileum, which so constricted the lumen that a resection was done with end to end anastomosis. This pa-

tient made an uneventful recovery, but died in a few months from metastasis of the growth—which was a lymphosarcoma.

The third case, which I wish to report in detail, was as follows:

D. W., white male, age 14 months. The child has been unusually strong and vigorous with nothing to suggest abdominal trouble up to the present attack. On December 2, 1923, he seemed unwell and to be in pain. He was given calomel and castor oil, with good bowel movements. The symptoms of general discomfort continued. On December 4th he was seen by the family physician. There was a mild bronchitis and a general listlessness, with a temperature of 100 degrees. That morning the child had passed a good deal of old blood and complained of paroxysmal abdominal pain. It had vomited once or twice, but not very much. On the 5th it was seen by another physician who thought pneumonia was developing. It was given a dose of castor oil. On the morning of the 7th the family physician saw it again and as there was abdominal pain and no action had been gotten from the oil an enema was given. This brought only a little blood. A mass was now detected in the lower left abdomen, so the child was brought to St. Luke's Hospital. It had one vomiting spell on the way and the vomitus was fecal in character. It reached the hospital at 5 P. M. on the 7th, having been sick about five days in all. It was very pale and listless. It appeared shocked, with rapid, feeble pulse, and temperature about 100 degrees. The white count was 18,000 with 42 per cent polys and 56 per cent lymphocytes. A sausage-shaped tumor could be plainly felt in the left lower quadrant of the abdomen, and was also felt on rectal examination.

The diagnosis of intussusception was confirmed. A grave prognosis was given, and an immediate operation advised.

Under local anaesthesia a lower left rectus incision was made and the mass delivered, which proved to be an intussusception of the ileum into the cecum, transverse, and descending colon. When this was reduced, the starting-point of

the intussusception was found to be a small tumor, two and a half or three inches in length, attached to the inside of the ileum some two feet above the ileo-cecal valve. Its point of attachment seemed to be an inverted diverticulum with a firm mass at its tip, the lumen being the size of a slate pencil.

The tumor was excised at its base and the opening sutured transversely. 60 c.c. of Saline was left in the peritoneal cavity, and the wound closed. The patient died a few hours later, of continued shock.

Pathological remarks by Dr. S. W. Budd:

A portion of an invaginated bowel removed at operation for intussusception measured $1\frac{3}{4}$ by $\frac{3}{4}$ inch. The distal portion of the removed bowel is balloon-shaped and solid; the proximal portion is hollow and the lumen admits a large forceps without difficulty.

The intestinal wall is thickened, engorged, edematous and in an early stage of gangrene. On close observation the relation of the mucosa and serosa to the lumen of the bowel is reversed so that the lumen is lined by the serosa.

In the tip of the inverted diverticulum of the intestine is a gland-like mass two by one c.m. in size. The glandular mass was located within the submucosa.

Microscopic Examination:

The bowel showed a gangrenous condition. The several coats of the bowel were heavily infiltrated with polymorphonuclear leucocytes, fibrin, blood and coagulated proteids. There were but few remnants of the original structures. The muscularis showed an active coagulative necrosis. There were a few glands which aided me in locating the mucous membrane. The gland structure in the tip of the inverted diverticulum was pancreatic tissue. All of the histologic structures of the pancreas were present—the lobules, the interlobular spaces, the interlobular ducts, and the islands of Langerhans.

When we consider the large portion of the foregut from which the pancreas arises, and when we consider the number of diverticula (two ventral and one dorsal) that enter into the formation of

the pancreas, and when we think of the rapid growth of the foregut in the pancreatic zone it is not difficult to picture a small portion of pancreas being unable to keep the pace of an actively growing diverticulum and becoming detached and carried backward or forward by a rapidly growing bowel. This is the probable explanation of the origin and position of our aberrant pancreatic case.

Aberrant pancreases while rare tumors are the most common anomaly of the pancreas. They may occur in the duodenum, the jejunum, the stomach, the ileum, the colon; in rare instances they may be found in Meckel's diverticulum and in the abdominal wall in the region of the umbilicus. Hanau describes a duodenal diverticulum tipped with an accessory pancreas, and Weichselbaum reported a similar diverticulum of the stomach.

In Case 52 of the series reported by Elliott and Corscaden an almost identical case was reported, and this the only one I have thus far been able to discover. I quote his exact words:

"Pathological Remarks: Accessory pancreas in blind end of diverticulum had formed pedunculated tumor in lower ileum."

CYST OF THE EPIDIDYMISS—CASE REPORT.

By Hamilton W. McKay, B.S., M.D.,

The Crowell Clinic of Urology and Dermatology
Charlotte N. C.

Inaccuracy in diagnoses in pathological conditions in and around the cord, vas, epididymis and testicle furnish the inspiration for an essay on a urological condition relatively rare but never the less important. Careless diagnosis of scrotal conditions are too frequently made and many skilled diagnosticians do not appear to associate the pathology which is usually found in each with the part of the seminal tract usually involv-

ed. A striking example of what I have in mind is illustrated by the diagnosis of orchitis being made in most inflammatory conditions of the epididymis while we know there are only three diseases which commonly involve the testes; namely, syphilis, tuberculosis, and new growths.

If, by calling your attention to a relatively rare enlargement in the scrotal region, I can stimulate interest in more accurate diagnoses of the diseased structures the purpose of this paper will be realized.

Anatomic Relation of the Testicle and Epididymis.

The testicle hangs suspended in a sac, the tunica vaginalis, which is reflected on to the epididymis at three points,—superior, middle and inferior,—and these folds of serous membrane are called ligaments of the epididymis. The upper fold is called the ligamentum epididymis superior and between its leaves pass the efferent ducts of the testicle. Two important embryonic remnants are worthy of your consideration—the hydatid of morgagni at the upper pole of the testicle and the peduncu-

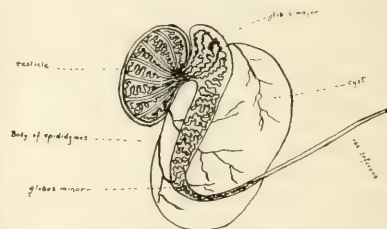


Fig. 1—Schematic sketch of relations of cyst to epididymis.

lated hydatid attached to the globus major of the epididymis by a stalk.

Cysts, commonly known as encysted hydrocele or spermatocele, are developed in and about the epididymis and should be classified as epididymal cysts.

Varieties.

Two classes are recognized—(1) The first consists of small cysts arising externally from the head of the epididymis. Usually they are about the size of

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a raisin and are seen late in life but in many instances, the diagnosis cannot be established until operation.

seldom contain spermatozoa and are of no clinical importance.

(2) The second variety develop within the epididymis and are large, varying in size from a hickory nut to a lime. The nature of the contents of the large epididymal cyst may be milky and swarming with spermatozoa or the fluid may be clear and watery.

Origin and Pathogenesis.

Large epididymal cysts are generally met with in the young while the small cysts are usually seen later in life. Some authors attribute epididymal cysts to the foetal remains of the hydatid of morgagni and the paradidymis. Keyes says "the recent tendency has been to discredit the claims of the foetal elements and to attribute the formation of cysts to a dilatation of the vasa efferentia and epididymis its self behind some obstruction." Griffith in the *Journal of Anatomy and Physiology* 1893-94, XVIII 107, compares cyst of the eqididymis to hydronephrosis and gives as a cause partial obstruction due to a catarrhal inflammation of the small ducts. The walls of the cyst are made up of connective tissue interspersed with smooth muscle. The contents may be milky or soapy in color or it may be clear like water. Spermatozoa are usually present but may be absent.

Symptoms.

Large cyst produces a dragging sensation on the cord and sometimes a neuralgic pain. The cyst usually occupies a position at the upper end of the testicle or it may extend down in front of it. Small cysts usually produce no symptoms and are only discovered by routine examination.

Diagnosis.

The presence of an irregular shaped tumor above the testicle and attached to it, should make one suspect cyst. Translucency has been present in the cases I have seen, though most authors say it is not a constant sign. A tense sac in the scrotum giving the impression of a third testicle is enough evidence to make the examiner immediately exclude cyst of the epididymis. In

Case No. 10386—H. M. Age 40. Professor.

The patient noticed a swelling in the left side of his scrotum five years ago which has gradually increased in size. He complained of a sense of weight and fullness in this region.

Past History: There was denial of any venereal infection and no evidence of a pre-existing epididymitis. No history of lues or tuberculosis.

Local Examination: Examination of left side of the scrotum revealed a tumor about the size of a guinea egg. The mass was tense, irregular and apparently attached to the epididymis or testicle. (I could not be certain which one.) There was no fluctuation. The light test showed the mass quite translucent. The prostate and seminal vesicles were normal to the examining finger.

Laboratory Findings: Urinalysis, Negative. Prostatic Secretion: 6 to 10 W. B. C. to h. p. f., no organisms seen. Blood, Hgb. 80, W. B. C. 7,600, R. B. C. 4,800,000. Blood Wassermann negative.

Operation: Under ether anaesthesia, the left side of the scrotum was incised and the tumor carefully dissected free. It was found that the tumor arose from

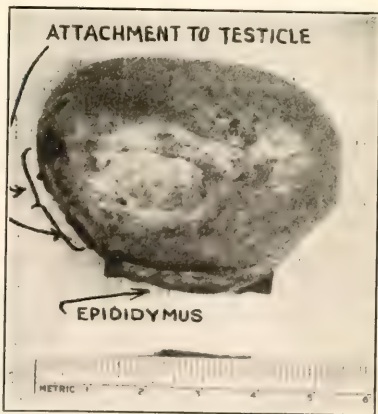


Fig. 2—Shows attachment of cyst to epididymis and testicle and remaining portion of epi-

the epididymal tissue and was firmly attached to the epididymis and testicle by a broad base. The cyst was separat-



Fig. 3—Showing superior view of cyst. didymis.

ed from the testicle by careful dissection without rupture. The exposed epididymis was sutured with fine catgut and the wound closed in the usual manner.

The Tumor: The cyst was 6 c.m. long, $4\frac{1}{4}$ c.m. wide, and 3 c.m. thick. Weight 44.3 g.m. Volume 43 c.c.

Conclusions.

(1) Epididymal cysts are probably more common than the literature indicates.

(2) The diagnosis is difficult and often cannot be made until operation.

(3) The cyst removed in this case is evidently retentive in character and the spermatocele type. It probably arose from a dilated seminiferous tube which was obstructed in some unknown manner or as a result of a catarrhal blockage of the duct.

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WASSERMANN AND KAHN REACTIONS.*

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Since the introduction of the Wassermann reaction, a great amount of energy has been expended in simplifying the technical difficulties making the results more reliable, and giving better conformity in the hands of laboratory workers. This has resulted in increasing the reliability of the test and at the same time practically eliminating falsely positive reactions. However, in the meeting of these important requirements the complement fixation test has not become simplified; but, on the contrary, more precaution and care in carrying out the technical details are now insisted upon.

There has been considerable interest, particularly lately, to develop a test depending upon a certain precipitation, called by some, flocculation, reaction which would be as reliable, or more so, than the Wassermann test. Several modifications of this kind have been introduced.

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These precipitation tests offer some simplicity, because the factors involved are not so numerous and do not require so many titrations to determine their strength and reliability. Instead of the five factors of the Wassermann reaction, which includes patients blood serum, guinea-pig serum compliment, heart antigen, rabbit serum hemolysin, and sheep blood cells, in the precipitation reaction, there are only two factors involved, the patient's blood serum and a heart antigen.

The precipitation methods include those of Meinicke, Sachs, Georgi, Vernes, Kahn and others. At present the test that is attracting most attention in this country is the method of Kahn. As demonstrated by Kahn, his results parallel very closely those shown by the Wassermann in the diagnosis of syphilis, certain cases showing a positive Kahn when the Wassermann is negative. Many laboratories, after considerable investigation, have lately adopted the rule of giving combined reports of Wassermann and Kahn tests.

It is not our purpose to go into any detail in regard to the technic of the Wassermann or Kahn reactions, but to present for your consideration an investigation of the results of nearly 2,000 parallel tests made by both methods.

For our Wassermann reactions, the Kolmer quantitative method² has been used by us in all our tests. In the hands of many investigators this has proven to be the most reliable method yet introduced for performing the complement fixation test for syphilis; giving a very high percentage of positive results in syphilis, and no falsely positive reactions. After having used this method in many thousands of cases, we take this opportunity of expressing our opinion in concurring with the above statement.

The Kahn precipitation test¹ was introduced less than two years ago, following several similar methods that have been tried out. This method has recently been still further modified by Kahn¹. However, our investigation was started with the original method of Kahn, using at first both the plain alcoholic and cholestrinized antigens. We

soon discarded the plain alcoholic antigen as unsatisfactory, and have based our comparison on the Kahn method with the cholestrinized antigen³, adopting, for the sake of preserving uniformity of strength of antigen, the recent method of titration⁴.

The difficulties we have encountered with the use of the Kahn test have been in the reading of the results due to only slight precipitate, or the presence of bacterial contaminating growth. Clear cut positive reactions are easily seen, but quite a number were not so readily decided upon. Where a reaction was doubtful we called it negative, just as we would with the Wassermann. A good many under these circumstances were repeated, resulting in a definite decision. The test is one that requires careful technic and considerable experience in reading results.

Comparative Results.

In a comparative study of 1935 parallel tests our results show an agreement of 91.6 per cent between the Wassermann and Kahn reactions, (Table 1.) This percentage is somewhat lower than is shown by Kahn¹ and Moody⁵ whose agreements were 95 to 98 per cent. However, they agree fairly closely with those given by Young⁶ and Detweiler⁷, and are somewhat higher than those given by Dulaney⁸ and Strumia⁹.

Table 1.—Comparison of 1935 Parallel Wassermann and Kahn Tests.

	No. tests	Per cent
Wassermann positive	815	42.1
Wassermann negative.....	1096	
Kahn positive	79	40.2
Kahn negative	1756	
Wassermann and Kahn positive.	719	
Wassermann and Kahn negative	1054	
Agreement of Wassermann and Kahn	1773	91.6
Disagreement of Wassermann and Kahn	164	8.4

We find that the Wassermann is positive in 42.1 per cent of all examinations and the Kahn in 40.2 per cent. This shows a very close agreement of positive results, but in considering this, one must bear in mind the disagreements of which there were 164 or 8.4 per cent. (Table 2.)

Table 2.—Disagreement of Wassermann and Kahn Test.

	No. Tests.	Syphilis.	Unproven Syphilis
Wassermann positive and Kahn negative	96	96	0
Wassermann negative and Kahn positive	42	40	2
Wassermann anticom- plementary and Kahn positive	18	16	2
Wassermann anti- complementary and Kahn negative	6	3	2

In the 96 cases of proven syphilis in which Wassermann was positive and the Kahn negative, there were 22 treated cases, five in the first stage, and five placental bloods, with mothers giving a history of syphilis.

In 12 Kahn positive reactions in which the Wassermann reaction was negative, 40 were proven syphilis, 12 of them were treated cases, and in two no history of syphilis could be obtained; these two being cases of pulmonary tuberculosis.

With regard to the sensitiveness of the two reactions, in 34 known treated cases there were 22 with a positive Wassermann and negative Kahn and 12 with a negative Wassermann and a positive Kahn, thus demonstrating that a higher percentage of Wassermann positives were obtained. This agrees with the results of Detwiler and disagrees with the conclusions formed by Dulaney and Kahn in regard to the sensitiveness of the two tests.

In spite of all efforts in doing the Wassermann tests, a certain number of anticomplementary reactions are encountered. In 23 cases giving an anticomplementary Wassermann reaction, the Kahn was positive in 17. Fifteen of this number were proven to be syphilis, and of six with a negative Kahn and an anticomplementary Wassermann three were proven to have syphilis. Here the advantage of using both of these tests is demonstrated, for a fairly definite opinion can be given without waiting for a repetition of the Wassermann. Of course, efforts should be made to confirm the Kahn with another Wassermann test. However, a positive or negative Wassermann is not always obtainable, though the tests be repeated.

It will be observed that we have had four cases with a positive Kahn in which no evidence of syphilis has been demonstrated. In considering these results, we should remind you that the greater number of our tests were made upon negroes in the wards and out-patient clinic of the Roper Hospital, from whom a personal history, without clinical evidence, is notoriously unreliable.

Little information is given in the literature on Kahn reactions with spinal fluid. Kahn and others state that so far results have been unreliable. Using 0.5 c.c. of spinal fluid and 0.05 c.c. of antigen, we have made 58 tests of which a positive Wassermann was found in 13, and a positive Kahn in six. The Wassermann and Kahn agreed in 49 or 84.4 per cent. The disagreements were 9 or 15.6 per cent. Of these eight gave positive Wassermann and negative Kahn, and one gave a negative Wassermann and positive Kahn; this was a case of encephalitis lethargica with no evidence or history of syphilis.

Conclusions.

As the result of our investigation of the two methods, we have arrived at the following conclusions:

1. In a series of 1935 parallel Wassermann and Kahn tests an agreement of 91.6 per cent was found.
2. The Kahn reaction offers a much simpler method to perform than the Wassermann, but cannot replace it, because the latter shows a higher percentage of positive results in known cases of syphilis.
3. In syphilis the Kahn test gives a certain number of positive results with the Wassermann negative, and likewise the Wassermann shows a certain number of positives with Kahn negative.
4. A positive Wassermann by the Kolmer method is diagnostic of syphilis.
5. A positive Kahn, with only a very few exceptions practically means that syphilis is present.
6. In the reading of the results of the Kahn test, considerable difficulty is encountered in those that are not strongly positive. Experience and careful technic are important factors.

7. In treated cases of syphilis the Wassermann tests appear to be more sensitive than the Kahn.

8. With spinal fluid a certain number of positive results can be obtained by the Kahn method, but these are only about one-half as many as can be obtained by the Wassermann test in syphilis.

9. We therefore consider it advisable that the Kahn test be used in conjunction with the Wassermann in all serological examinations made for the diagnosis of syphilis; because, on account of its very close agreement it acts as a check on the Wassermann, and also gives a certain number of positive results when the Wassermann is negative.

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THE FUNCTIONAL ABDOMINAL INVALID.

Roy P. Finney, M.D., Gaffney, S. C.

The late Sir William Osler is quoted as having said: "Young gentlemen, when you see a case of arthritis deformans coming into your office, jump out of the window and thereby save your patient money and yourself a reputation."

There have been times when the author earnestly wished that he might gracefully and decorously follow the master's

advice, not only as pertains to the chronic arthritic but also to another class of office benchwarmers to whom the appellation of "Abdominal Invalid" would seem appropriate. In using the term abdominal invalid the author intends to refer in this paper only to those patients whose presenting symptoms are referred to the abdomen and are classified as functional after an exhaustive examination has failed to reveal pathology that admits of a definite diagnosis. Their number is not large, thanks to the refinement of modern diagnosis, but by frequency of visits they detract from the richness of this blessing and often like the wandering Israelite they travel from place to place until some one touches the right key or old age finally incapacitates them.

The complexity of symptoms and the variety of external influences entering into the clinical picture of the functional invalid makes one hesitate to even attempt a classification. However, during a recent review and refile of case histories dealing with functional abdominal conditions, the author was struck with the frequency with which four particular types were encountered. To be brief, out of 205 cases studied, 150 were found to correspond more or less accurately to one of the four following types:

First, we have the constitutionally inferior—a poorly nourished creature with the asthenic habitus, visceroptosis, a spastic colon and a scar somewhere near McBurney's point. The blood pressure more frequently than not is found to be low and at times one imagines he can find insufficiency. Martinet¹ has described a syndrome which he calls hypophyoxia that includes many patients of this type. The picture here is the most definite of all and is frequently seen. As Elliott says it represents a partial failure on the part of nature in creating the individual, and here we find such morphological misadventures as Jackson's membrane, Lanes Kink, Cecummobile, etc., to say nothing of the much abused floating kidney. Women are more frequently affected than men (31 out of 44 in the author's cases) and the story of their complaints

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may turn the historians attention to every system of the body. In marked contrast to the verbosity of the symptoms, physical examination will elicit little except this—a distinct tenderness on deep pressure somewhere in the right lower quadrant and regardless of whether the appendix has been removed or not. It is this sign which like the desert mirage leads the surgeon on to an unsuccessful operation, for surgery cannot be made extensive enough to refashion an organism that is defective in its entirety. It is wise never to make a diagnosis of chronic appendicitis in this type of case.

The second type, though not as clear as the first, is nevertheless a definite one. Here nature has somewhat overdone things and we have a middle aged person of the sthenic habitus with a high cowhorn hypertonic stomach which secretes an overabundance of acid, and a distinct tendency to vagatonia. More or less obesity is usually present together with an enormous appetite and a spastic form of constipation. The general contour of the patient may remind us of Deaver's epigram "fair, fat and forty, belching gas—gallstones." Among them we often find the ulcer syndrome without being able to demonstrate ulcer though occasionally it is strongly suspected, probably the most frequent cause of the gastric complaints is to be found in a chronic cholecystitis with or without cholelithiasis.

H. E. Griffiths in his Hunterian lectures emphasizes the fact that the gall-bladder and stomach are parts of a definite reflex nervous arc. "Irritation of the mucous membrane of the gall bladder causes a reflex irritability of the vagus which is most marked by its action in the stomach where an increase in the amount and acidity of the gastric juice is produced associated with a relaxation of the pylorus and regurgitation from the duodenum." As our ability to diagnose mild forms of gall bladder infection increases it is probable that the ranks of so-called functional members of this group will be greatly thinned.

A latent chronic appendicitis may also cause the gastric symptoms by means

of the same reflex nervous arc. In this type of case surgery is frequently successful in curing what was supposed to be a functional condition by removing a diseased appendix or gall bladder.

The third type is the most indefinite of all and serves as a sort of diagnostic waste-basket. It is composed of adults of all ages, includes both the fat and the lean and is equally frequent among men and women. (27 males to 29 females.) In all of them careful questioning will establish a clear neurotic tendency and a habit of introspection and exaggeration. The leading symptom is gastro-intestinal but there is always a background of other complaints such as lassitude, backache, cold hands and feet, the neuro-arthritic syndrome, etc. It is important for the clinician to realize that this type is rarely a constitutionally inferior and that the neurotic symptoms present may be the result of a constant drain on the vitality exerted over a long period of time by some chronic organic disease. Focal infection is always to be suspected and some remarkable recoveries may be obtained by draining an infected sinus, extracting a diseased tooth, etc. The importance of repeated and exhausting search for such foci in these patients cannot be overemphasized and the profession owes Billings, Rosenow and others a debt of genuine gratitude for their valuable researches along this line.

The fourth and last type is the unmistakable neurasthenic. Here again we may find the presenting complaint abdominal with a background of bizarre symptomatology but careful history taking will bring to light the characteristic weakness, fatigueability and irritability of the various functions motor, sensory, psychic or visceral. According to Dercum, the appetite is usually normal or increased and thirst markedly diminished. He regards this point important in the differentiation from melancholia.

It is usually not difficult to recognize the typical neurasthenic, though of course a thorough clinical and laboratory examination is indispensable. The atypical neurasthenic and victims of the

mixed neuroses form the class in which the largest number of diagnostic errors are made.

The problem of treating these invalids and semi-invalids will at times tax the wisdom of a Solomon. The physician should first of all inspire confidence by the thoroughness of his examination and then having made a diagnosis of functional disorder, he should disregard the disease and treat the patient. This dictum of course means that no two cases can be handled exactly alike, and the successful therapist must be able to assume the role of an actor, being grave or cheerful firm or concessive, attentive or neglectful, as the case demands. In all diseases of functional origin psycho-therapy must either directly or indirectly play an important part, and in many cases success depends entirely on a knowledge of this branch of therapeutics. It should begin with a firm convincing handshake, as the patient is admitted to the examining room, and should not end until recovery has been achieved. All statements made to the patient must be definite and convincing. "I am unable to locate any organic disease," should be replaced by, "You positively have no organic disease," repeated several times with emphasis. A brief but clear explanation of the origin of symptoms is indicated. Since most neurotics are guilty of morbid introspection they should be told to guard against this evil. Unfortunately, many find that they can no longer direct their thoughts, and while they have been brought to realize the benignity of the symptoms, yet they cannot divorce them. In these cases the author has relied successfully upon this simple mental exercise—the patient is instructed to take his watch, a pencil and paper and see how many clear mental landscape pictures he can form in a quarter of an hour, the total number being jotted down on paper and kept for future comparison. It is surprising how much benefit may accrue from this simple expedient. Psycho-therapy is of course most successful with neurotics and neurasthenics.

The constitutionally inferior must be

made to realize that he is incapable of leading a strenuous life and his habits must be regulated accordingly. The thin visceroptotic should have the accompanying constipation corrected and then, if possible, should be made fat. The result obtained is often far short of that desired and appendectomy is usually performed sooner or later with no benefit.

Rest, message, hydrotherpy and electricity are all of great value in any functional condition of the abdomen and should not be neglected. Diathermy over the liver and cecum is especially valuable when pain is conspicuous.

The logic of gall-bladder drainage by the Lyon-Meltzer method may be questioned, but there are many cases benefited by it. There is nothing better for the class of patient who complain of "chronic biliousness" and "torpid liver."

In a series of 20 cases the *Bacillus Acidophilus* milk prepared and shipped by Lederle Antitoxin Laboratories and given at the rate of a pint and a half a day changed the fecal flora from a proteolytic to an aciduric in a few days, with marked benefit in twelve cases and some benefit in all.

Drugs are of limited value, but must be given to relieve symptoms. Belladonna, bromides, valerian and the alkalis may be used to advantage when indicated.

THE RELATION BETWEEN SURGERY, X-RAY AND RADIUM TREATMENT.

By W. P. Whittington, Asheville, N. C.

In presenting this paper it is my intention to deal with facts so far as it is possible under the existing conditions.

It is said that love is blind and therefore the one in love fails to see many faults or defects really existing in the object of his affection, and, on the other hand, is inclined to magnify the good qualities. This may apply to the Sur-

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geon, Radiologist and Roentgeneologist.

It is a fact that while surgery, X-rays, and radium should go hand in hand in the treatment of many conditions, there are other fields, and conditions in the same field, where each method may have its decided advantages.

For instance, in many acute and some chronic conditions in which surgery has decidedly the preference over X-ray or radium, or over both combined; on the other hand, there are other cases, formerly considered purely surgical, where radiations are of very great advantage to the patient undergoing the surgical procedure.

I first wish to discuss jointly and separately the effects and uses of X-rays, and radium, and then try to make an honest comparison of the rays with surgery. The rays emitted or produced by modern X-ray machines and tubes are almost identical with those furnished by radium. The character and effects of each, depending first upon the length of the wave vibration, and second upon the character and amount of the intensity of the wave vibration, and the time such current is applied to the part treated. The short wave or gamma rays are the more penetrating, and are consequently the most useful in the deep conditions, as cancer of the uterus, and other pelvic and abdominal organs, and large neoplasms situated on any part of the body. Many small superficial conditions require the short wave or gamma rays, on account of their high resisting powers.

There is a contention now going on between the X-ray and radium men or companies and users, as to which is really the more effectual, in a wide field for application. Those of us who happen to have, and are familiar with, one of these methods naturally claim that this is most effective and consequently the most useful.

I know of no better way to arrive at a conclusion of this matter than to quote the results and conclusions of men of long experience and wide opportunity. First I will quote the results of the investigations of Dr. Harry

R. Gaylord and K. Wilhelm Stenstrom, Ph.D., of the State Institute for the Study of Malignant Disease, at Buffalo, N. Y.

This report was published in the American Journal of Roentgenology and Radium Therapy, January 1923. This is a State institution, and is financed and run by the great State of New York, with the sole object of discovering the cause of malignancy, and a cure for the same, that suffering and dying millions might be relieved and their lives prolonged.

The title of this article is "Comparative Measures Between Radium and X-rays Concerning Energy Absorbed at Depth." The object directly being to determine the relative capacity of radium and X-rays in the treatment of diseases, from the surface to a certain depth, say 10 cm.

After careful experiments with latest ionization chambers, and every other method known to the X-ray student, it was determined "That for radium to compete with the present X-ray equipment, huge amounts would be required, the cost of which would be prohibitive." "Also that the difficulty of obtaining adequate protection from such large amounts, even if available, would constitute an unsurmountable obstacle. The radium pack at present used at this institution has a radiation surface of 6.5x7 cm at a distance of 6 cm from the skin, and with approximately 1.5 curies of emanation, and gives the standard erythema dose at 6,000 mc hours."

"From the measurements obtained, the standard erythema dose was determined from the X-ray machines at 2.3 mc. hours when operated under the following conditions: 198 KV measured with ball sphere gap 12.5 CM diameter; 3MA; 5MM copper filter; 30 CM focus skin distance; 10x15 CM field. The radium pack under these conditions gave 17 per cent of the erythema skin dose at 10 CM depth, while the X-ray gave 29 per cent skin dose at 10 CM depth. With 2.55 grams of radium "at a cost of \$178,000.00" the erythema skin dose could be produced in the same time as

with the X-ray machine. They further state that moderate amounts of radium in properly arranged packs will, in some instances, be found to meet special conditions better than X-ray; but these occasions are few." These gentlemen further state, "that with improvements which may be expected in the near future, the field of usefulness for the moderate sized radium pack will be increased, and that the advantages of X-rays apply only in external radiation. In those cases where the growth can be reached, and radium or emanation of radium can be planted into the substance of the tumor, X-ray cannot displace radium."

They can, however, be combined with radium implantation and X-rays used superficially, and the problems presented by certain lesions may be best met in this manner.

To illustrate this proposition, take a neglected case of carcinoma of the uterus where the disease has extended to the periuterine pelvic tissues, especially if the patient is very plethoric, the use of small amounts of radium alone would not be effectual, but with the cross-fire multiple antero-posterior method, X-ray would be very valuable. Both radium and X-rays would be more effectual, as the disease could be attacked from within and from without at the same time, and the results would be quicker.

Beside the depth penetration of X-rays, the wide areas over which it can be applied in multiple growths and metastases, makes the X-rays much more useful. But we will have more to say on this line in the comparison of X-rays and surgery.

In discussing what were formerly considered purely surgical diseases we will mention only a few of the most important, most of which are very slightly affected by internal medicine, if at all.

Of these I will mention especially carcinoma of uterus, and breast, as being the most common except the various forms of skin cancer, epithelioma and sarcoma.

Of the benign conditions we will mention under the class of formerly surgical conditions, fibroid tumors of the

uterus, uterine hemorrhage, from menopause or sub-involution or from a relaxed condition of the muscular uterine walls with dilated weeping blood vessels.

Some of the various thyroid conditions, hypertrophied, diseased tonsils, tubercular adenitis, keloid, and various other conditions, which are not amenable to surgery, yield readily to x-radiation or radium. In carcinoma of the uterus in this country there is a rapidly growing opinion that every so-called operable case should have a pre and not a post-operative course of x-raying. We believe with most of the European Gynecologists, who are also Radiologists, that with the multiple cross-fire x-radiation from six or eight skin portals giving one of the series through the vagina directly onto the cervix, or through one anterior and one posterior large port with 200 KV, that we can cure or suspend the active process, much more successfully than by surgical treatment alone. There is a limit to surgery in all inoperable and most recurrent cases. Many of these are being relieved by combined radiation, and are made more comfortable, for many months, and a few apparently cured. Dr. Burton J. Lee of the Memorial Hospital of New York, "states that he has carried out this pre and post x-radiation for a long time, and that they have much less metastasis, and that he fully believes that their patients live one-third longer than those of the hospitals that do not use the raying."

What I have said about cancer of the uterus applies equally to cancer of the breasts and other parts of the body. There is a difference in recurrence of cancer which appears in or near the location of the former growth, and metastasis which may occur in distant parts of the body. Metastasis of malignant diseases always takes place through the lymphatics, except those of the angiomatous class. These metastases do not always follow the immediately adjacent lymph channels, but may pass around one near by lymph field to flare up in a second adjacent or in a field very remote.

Since this is the case, you can see at once how important it is not only to X-ray the nearby lymph fields, but also those more remote. This can readily be appreciated when we examine a case of advanced cancer of the uterus or breast, and observe the great number of lymph nodes cropping out all over the body with the entire lymphatic system thoroughly saturated with the cancer poison.

We will also recognize (if we stop to think) how important it is to ray all the lymph fields in a wide area of all malignant neoplasms before and after any or all surgical procedures. When you can see or feel a few enlarged lymph glands in the axilla or any locality near a cancer of the breast, or in the inguinal or pelvic region in cancer of any part of the uterus, it is already too late for an operation unless all the lymphatic system from the chin to knees are completely and thoroughly X-rayed. Even then the probability is that the patient would live longer and be more comfortable without operation. In illustration of the benefits of pre and post radiations, I wish to quote from an article by Dr. George E. Pfahler, of Philadelphia, some extracts from a paper published in the January number of *The American Journal of Roentgenology and Radium Therapy*, January, 1922.

"Case 1. Female 36 had been operated on by Dr. John B. Deaver, of Philadelphia, three times; first for carcinoma of the thyroid, July 1908; for carcinoma of the thyroid, March 1909; and May 1910, for recurrences, and was referred to Dr. Pfahler for recurrences, consisting of an indurated mass in the region of the wound immediately above the clavicle on the right side, and another indurated movable tumor mass one inch in diameter situated below the mastoid on the right side. She was treated by fractional doses, through 4MM of aluminum filter, the applications being made twice a week, so that each side of the neck was treated once a week, and the dose amounted to approximately half an erythema dose.

Under treatment the patient regained health for about a year and there was no local recurrence at any time; but about eighteen months after beginning treatment she developed symptoms of metastasis in the neck, and died July 5th, 1912."

"Case 2. J. P. P., female, age fifty-one, was referred November 16, 1911, by Drs. J. M. Anders and F. S. Parke. A diagnosis of carcinoma of the thyroid was made, and she was given X-ray treatment with little hope of success. She was treated three times a week for one month by fractional doses, amounting practically to one-third erythema dose, twenty milliamperes minutes were given at 12" distance, filtered through 4 MM of aluminum, while a 7 inch parallel spark gap was used. The treatments were given alternately right and left. Within three weeks the pulse was reduced from 160 to 120. Treatment was discontinued at the end of one month, but her improvement was progressive, and within three months she had regained her health. A letter of inquiry in 1918, seven years after the treatment, brought the following report from her daughter: "Mother is in better health than she has had for the last twelve years. She has had no treatment other than the X-ray treatment given by you."

Remarks—"The diagnosis in this case is, of course, open to question. There was no operation and there were no microscopical studies, but the clinical diagnosis seemed that of carcinoma, and at the beginning of treatment none of us had much hope. She was, however, inoperable and the probabilities are that if the treatment had not been given she would not be living. We have therefore prolonged her life at least seven years, and probably many more."

"Case 3. L. S., female age 46, referred by Drs. Geo. P. Katzenstein and John B. Deaver, February 10th, 1913. She had had goitre for twenty years. She was operated on by Dr. Deaver two weeks before she was referred to me, at which time he encountered much hemorrhage and degeneration of the tu-

mor, and on section it was found to be carcinomatous. He stated to me that it was impossible for him to remove all of the tumor tissue and that he knew he had left part of the carcinoma behind. She was given X-ray treatment, nearly every day including different seances, approximating four-ninths of an erythema dose at each visit. This treatment was continued almost daily for three months, then three times a week for three months, and treatment was discontinued December 2nd, 1913, ten months after beginning. She has been observed from time to time since then, and was last seen September 19, 1921. She is in perfect health, pulse normal, neck normal except very slight and scarcely visible telangiectasis." This patient is alive and well eight years after an incomplete operation by one of the finest and most competent surgeons in the world.

Dr. Pfahler in this article reports ten cases, four of whom had been operated upon by Dr. John B. Deaver. Four others had been operated upon by able surgeons. In all of the eight operated, a positive diagnosis had been made by the microscope. All of this number operated either had recurrences and were reoperated, or only enough tissue was removed to complete the diagnosis. Two had no operations or microscopic diagnosis. Two of these died two years after operation and X-ray treatment of spinal metastasis and paralysis. One seemed to improve for a short time, but died six months after being referred for radiation. Seven were alive and apparently well September 1921, two to eight years after radiation treatment. One case, No. 9, received two treatments of sixteen needles of radium inserted into the tumor, each needle containing ten miligrams, together with ten series of X-ray treatments, and was apparently cured.

In Dr. Pfahlers conclusion he states that every case of carcinoma of the thyroid that has been operated upon should receive as soon as possible at least two thorough treatments of roentgen ray treatment, and more if the disease has not been completely removed as far as

the surgeon can recognize. Further, that if a diagnosis of carcinoma of the thyroid can be made without operation, a reasonably good hope can be entertained by radiation treatment, and that recurrent cases can be made to respond, and the recurrence made to disappear; but the definite metastases are not likely to be controlled in late cases."

In regard to treatment of carcinoma of the pancreas, Dr. Richards of Toronto, Canada, in the March Journal of Roentgenology said that while available statistics show a very small per cent of carcinoma of the pancreas, he is satisfied that there occurs a much larger number than has heretofore been recognized.

He reports three cases, two of which were diagnosed by laboratory report. The third had every appearance of malignancy in an advanced stage. By heavy x-radiation the two cases in which a positive diagnosis was made were symptomatically cured; while the other died from an extensive hemorrhage soon after one series of x-raying."

I refer to these cases because carcinoma of the pancreas, has been found so difficult to treat by operation and the mortality so large that we should be greatly encouraged to know that under x-radiation we could apparently cure two out of three.

I wish to briefly refer to nine of my own cases of fibroid uterus, and eight of uterine hemorrhage without tumor involvement, all of which are symptomatically well. These are all new cases since my report in a paper read at the October meeting of the Tenth District Society and published in Southern Medicine and Surgery. I am glad to be able to state that all the cases reported at that time remain symptomatically well. If time would allow, I would be glad to report very satisfactory results in the X-ray treatment of goitre, tonsils, tuberculous adenitis, and various other conditions in which is included surgical and X-ray treatment. I wish especially to report that last week I examined Mrs. L. O. G., the case referred to me by Drs. A. and P. of Asheville, N.

C., and that she is well, with healthy cicatrix of the cervix and adjacent vaginal attachment showing where the extensive slough formerly was.

This was a case of extensive cancer of the cervix which was opened for hysterectomy and abandoned on account of the extent of the disease to the adjacent pelvic tissues. The treatment, consisted of heavy cross-fire x-radiations, through many portals, covering all the pelvic organs, liver, spleen, and inguinal areas. This patient, now nearly three years after the operation, is in fine general health, and symptomatically well in every respect.

In Conclusion.

I wish to say that surgery has a wide field of usefulness independent of X-rays or radium, and that on the other hand, X-ray and radium have their field where surgery should seldom enter. Again, many cases may be best treated and serious difficulties overcome by the combined use of the three methods.

In malignancies as a whole, I believe that radiation, with diathermia, in the methods of desiccation, and coagulation, will soon almost entirely do away with surgical methods. I hope the petty jealousies existing between the surgeon and radiologist will be put aside, and that we will arrive at a proper conclusion as to our true relations, and will work together for the best interest of the afflicted. This is scientific. This is humane.

A CASE OF CANCER OF THE TRANSVERSE COLON REMOVED IN RATHER AN UNUSUAL WAY.

Dr. George H. Bunch, Columbia, S. C.

Mr. Wm. S., age 58, a meat cutter by trade, was admitted to the Columbia hospital on August 16, 1923, having been referred for operation by Dr. R. T. Jennings, of Columbia.

He was an emaciated, elderly white man about six feet tall and weighed 140

pounds, having lost 20 pounds in three months. He was in good health until May 1923 when he began to have pain to the left of the navel about a half hour after meals. This gradually became worse until July first when he had to stop work because of it. About that time he had spells of nausea and vomiting which increased in severity until he said he vomited most of the food he ate. He had vomited no blood and had had no tarry stools. Since his disability began he had been constipated. This grew worse until he had great difficulty in making his bowels move even with strong medicine. His pain increased in severity becoming a constant dull ache with spells of rather sharp colic about the navel. His strength failed. For four weeks he felt so badly and became so weak that he had to be in bed.

His past history is not of much interest. He had pneumonia three times when young. He had influenza in 1918, and malaria early in 1923. He has had a large inguinal hernia for nine years for which he wears a truss.

Physical examination showed a thin, sallow old man with normal lungs but weak heart sounds. His blood pressure was only 95 systolic and 60 diastolic. The abdomen was scaphoid. A slightly tender mass indefinite in outline but apparently about the size of an orange was felt under the navel extending to the left. This did not move with respiration. He had no fever. The blood count was normal.

On the diagnosis of chronic intestinal obstruction from a malignant growth, probably of the transverse colon, we advised exploration. On August 17th, under one-half per cent novocain infiltration we opened the abdomen through midline incision over the tumor. The mass was hard and round and much larger than our examination had led us to believe. It filled the middle abdomen so that the abdominal walls had to be strongly retracted to expose the sides of it. It was firmly adherent to the whole length of the greater curvature of the stomach. It was a growth evidently malignant, involving practically the whole of the transverse

*Read at the Greneville meeting of the Tri-State Medical Association, Feb. 20-21, 1924.

colon, the splenic and the hepatic flexures being pulled together by it. There were no nodules in the liver but the lymph glands in the gastro-colic omentum were large and hard. We considered the condition inoperable and advised doing a colostomy. But the patient in a wistful way asked for something more radical to be done. A resection of the large bowel is quite a formidable procedure at best and in a man of 58 with a systolic blood pressure of 95 the operation would certainly result in death from shock. He was a poor anaesthetic risk but ether was given. Under the relaxation of the ether we could make a better examination and found that the mass was not attached behind. With misgiving we began to separate the mass from the greater curvature of the stomach, leaving as much as possible of the gastro-colic omentum with the palpable glands attached to the tumor, but being careful not to injure the mid-colic artery. The great omentum was separated below. Finally the growth with the gas-

the mass was delivered the hepatic and the splenic flexures of the colon came together in the mid-line and the proximal and the distal gut was sewed together for several inches up to the growth. The growth was pulled through the upper angle of the abdominal wound and the incision was closed about it, leaving the gut involved in the tumor outside the abdomen unopened and with an unimpaired blood supply. The patient took the ether well and had very little shock from the operation. His bowels moved from a cathartic on the third day and we put him on soft diet. On the eighth day there was a gangrenous spot on the tumor which sloughed, forming a fecal fistula, but in the meanwhile the wound had healed so that there was no infection of it. Every day the patient gained in strength and in appetite.

On the 10th day he was brought to the operating room for the second operation, the removal of the growth. This was done without any anaesthetic by the electric cautery. There was some



Fig. I—Cancer of transverse colon after delivery from abdomen.



Fig. II—Picture taken at time of removal of growth by electro-cautery, ten days after delivery from abdomen.

tro-colic omentum and glands was freed so that it could be delivered through the abdominal wound. The mesocolon had not been cut and the blood supply to the growth was not interrupted. When

bleeding and the mid-colic artery had to be tied when cut. There was considerably more shock after this operation than after the first although it lasted only a few minutes and no undue difficulty was experienced in doing it. This

left the patient with the distal and the proximal ends of the resected colon projecting from the upper angle of the healed abdominal incision like the ends of a double barreled shot gun. In about a week a long bladed hemostat without teeth was clamped with one blade in the distal gut and the other in the proximal gut. In four or five days the tissue in the forceps cut through and the double barreled fistula became a single barrel, in other words the fistula became a spur from the gut which would tend to close spontaneously with time. Although there was always a fecal discharge from the fistula, after the forceps were removed, much of the bowel contents were discharged by anus. The patient had a good appetite and was sent home for a month to regain his strength and to see if the fistula would not close spontaneously. He returned on November 1st with the fistula smaller. He had gained 20 pounds and was up to his normal weight. At this time we operated upon him for the third time and closed the fistula. This was done without opening the peritoneal cavity and might very well have been done under a local anaesthetic, although we gave him ether. Before dismissal from the hospital he was given the usual deep X-ray therapy to prevent recurrence of the malignancy. On January 1st, 1924 his weight was 165 pounds, more than he ever weighed before, and he had gone back to work.

Dr. Routh, the pathologist, reported the growth adeno-carcinoma of the sigmoid. The tumor measured 13x11x7 c. m. and weighed one pound some weeks after having been in formalin.

This tumor was removed by the Mikulicz operation which is done in three stages.

First, delivery of the growth from the abdomen and the closure of the abdominal wound about the afferent and the efferent gut; second, in about ten days the removal of the tumor with the cautery; third, the extraperitoneal closure of the fecal fistula. Only the first stage is done intraperitoneally, the second and the third are extraperitoneal. The operation of intestinal resec-

tion for malignant tumor when done in this way is not nearly as formidable as when done in the usual way. Mortality after resection of the large gut is due to shock or sepsis. When the operation is done by this method in three stages shock is very little. The patient is allowed to react and to come back between the stages. Sepsis as a cause of death is practically eliminated because the gut is not opened for about ten days. The resection is done outside the abdomen and only after the abdominal wound has healed. Unfortunately, not every case of tumor of the colon can be done by this method. Obviously the method is applicable only where the tumor may be freely mobilized. The objection to it is a rather long morbidity with the nuisance of having a fecal fistula for several weeks.

The Mikulicz operation was introduced into America by Prof. Von Mikulicz when he read a paper before the American Surgical Association in 1903 in which he reported a series of 24 cases of cancer of the large bowel done by his method with a loss by death of only four, but in none of these can the operation be held responsible for the fatal outcome. "One patient died, eleven days after operation, of embolism of the lung; another after a week, of pneumonia; a third, six weeks after the operation, of general carcinomatosis; and the fourth, within two days, of peritonitis, caused by rupture of the carcinomatous gut during the enucleation of the tumor, so that a large amount of infective intestinal contents reached the peritoneal cavity during the operation." (Boston Med. & Surg., Jun., Vol. 1, 1903, p. 611). Previous to that time resection for tumor resulted in a primary mortality of 30 to 50 per cent, most of the patients dying of peritonitis. In the *Annals of Surgery* (Aug. 10, 1923) Miller exhaustively reviews the cases of cancer of the colon treated in Johns Hopkins Hospital for 30 years from 1889 to 1919. There were 129 cases, exclusive of the rectum, in the series. Of these there were but 70 treated by resection: that is to say,

in barely over 50 per cent was it considered advisable to attempt resection. "In 70 resections there were 24 post operative deaths, an operative mortality of 35 per cent. Operations on the transverse colon had a mortality of 57 per cent, on the left colon of 41 per cent, and on the right colon of 25 per cent." He speaks of the transverse colon as a particularly dangerous area and says that resection with lateral anastomosis had a mortality of 75 per cent.

In conclusion we beg to say that the case we have reported has been a very interesting one to us. We do not believe we could have successfully operated upon it by any other method. We believe that the Mikulicz three stage operation as described, in cases where sufficient mobility of the tumor may be had, is the safest and the most satisfactory way of treating cancer of the colon. By it operability is increased and mortality is lessened. We believe that the operation is not done as often as it should be done. Mikulicz's operative mortality as given in his original paper was 16 per cent, as compared with the Hopkins mortality of 35 per cent.

THE MANAGEMENT OF BENIGN PROSTATIC HYPERTROPHY WITH ESPECIAL REFERENCE TO RECENT ADVANCES.*

Linwood D. Keyser, M.D.

Roanoke, Va.

It shall be my purpose to review the present day methods of dealing with benign prostatism and mention in some detail several advances that have been brought forward during the past four years. I shall confine myself to general principles rather than give lengthy description of technique, to those principles which in pro-operative, operative, and post-operative management have

made the clinical conquest of this disease one of the greatest surgical triumphs of the age.

Prostatic hypertrophy occurs in 60 per cent of all men over fifty years of age and it is said that 35 per cent of these require some form of treatment. As causative factors, senility, diet, metabolic error, endocrine dyscrasias, infection, and neoplastic tendency have been accused but as in the somewhat analogous, if not homologous condition of uterine myomata, we are still in the dark so far as etiology is concerned, and as a consequence prophylactic treatment cannot be instituted on a rational basis.

Pathologically there are several varieties of benign prostatic enlargement. True neoplasms in the form of adenoma occur but are infrequent. Hyperplasias, localized and diffuse, in varying degrees affecting the lateral and middle lobes, and involving the epithelial, muscular, and fibrous tissues are recognized. The degree to which the epithelial, smooth muscle, or fibrous tissues are relatively involved determines the size and the induration of the gland so that we see clinically the large soft prostate, the small hard fibrous prostate and intermediate varieties. Every degree and combination of lobe involvement is found but as a rule the anterior and posterior lobes escape. Tandler and Zuckerkindl feel that hypertrophy begins as a rule in the median lobe but this is much disputed and certainly as we see cases clinically the middle and lateral lobes are involved in every degree and all manner of combinations. Lowsley explains the rarity of involvement of the posterior and anterior lobes as being due to the fact that the prostate develops from tubular epithelial outgrowths from the urethra, that the anterior and posterior lobes undergo an epithelial regression so that at birth we find in them only two and four tubules respectively. This sparsity of epithelial elements makes them less likely to be involved in a benign hyperplasia.

From the Department of Surgery and Urology, Lewis-Gale Hospital Clinic, Roanoke, Virginia. Read at the Greneville meeting of the Tri-State Medical Association, Feb. 20-21, 1924.

As the prostate enlarges it tends to dilate the internal sphincter, and extend through it, elevating the urethral

orifice and making the urethra itself elongated and tortuous. The trigone is lifted up in such a way that it almost drops downward, in a vertical direction. As a result there is an insidious increasing obstruction to the urinary outflow with stasis and its sequelae, dilatation of the bladder, hypertrophy of the bladder musculature, trabeculation with cellule and sometimes diverticula formation. The compensation of bladder hypertrophy fails as the obstruction becomes more severe. Residual urine develops from inability to empty the bladder and somewhat later as the residual urine becomes a chronic factor the ureteral orifices become dilated, hydronephrosis and hydronephrosis make their appearance, the dilatation gradually progressing from below upward. When the hydronephrosis becomes well developed thinning of the renal cortex with marked anatomical destruction of the parenchyma takes place. Long before the hydronephrosis or hydronephrosis take place, in fact sometimes when there is very little residual urine the pressure equilibrium of urinary secretion has been upset and although there is little anatomic change in the kidneys, impairment of function is present. Failure of elimination of uric acid, urea, and creatinin are noted in the blood examination, the urinary solids are diminished, the phenolphthalein test solution is not normally eliminated. To overcome this secretory upset the kidney makes an effort in secreting large amounts of fluid and there is a consequent fall in specific gravity. In other words the kidney has lost its power of concentration. These things usually happen in the sequence which I have noted but there are many combinations of degree and variety of anatomical and functional disturbance encountered. At some variable time, often on attempt at relief by the catheter, infection enters the field and plays its role in divers ways and adds the sequelae of cystitis and pyelonephritis to the already distressing symptom complex. Calculus usually vesical in type complicates from 14 to 20 per cent of the cases.

I will not enter upon the subject of symptomatology, examination, or differential diagnosis. It is the therapeutic management that concerns us at present. We have to correct an obstructive type of renal imbalance which has come on insidiously over a number of years to add itself to the infirmities of advancing age.

The first principle that I wish to bring out is that obstructive renal insufficiency means failure of elimination and to restore this elimination is our first effort rather than the removal of the obstruction. The second principle is that our restoration of elimination must be to some extent in the same gradual insidious manner in which it took place. Gradual institution of drainage under conditions of pressure which are slowly brought to the normal, with ever forcing of fluids to whip up the kidneys and bring into full play their potential secretory activity are our methods. In this way the renal imbalance is again brought to a condition that approaches the maximum possible consistent with the amount of permanent damage that has been done.

In every phase of the management of the prostatic the factors that must be constantly and consistently weighed are the amount of obstruction, the amount of residual urine, the degree and site of infection, the blood pressure, the condition of the heart and lungs, the presence of oral sepsis, the renal function as determined by several tests especially the phthalein, blood urea, and the specific gravity, and above all the general health, nutrition, weight, and strength of the individual. When these have reached a maximum of functional efficiency and are clinically satisfactory then and then only should the patient be considered as ready for operation, as the mortality of any type of operation will go *pari passu* with the consideration or neglect of these factors.

I have emphasized gradual relief of obstruction. We have as our means suprapubic drainage or intraurethral drainage with the catheter. The urethral catheter may be used intermittently or may be left in situ. I feel that

the tendency to use the indwelling catheter in every case possible is growing as with a little worry and fussing we can bring the majority of patients through without a two stage operation, the first stage of which has a definite mortality of its own. The catheter should be gently introduced using a wire obturator if necessary, should be carefully adjusted and then left alone except for daily irrigation to avoid encrustation. Calculus, severe urethritis, stricture, and extreme hypersensitivity are contraindications. When these are present suprapubic drainage by the open operation or the Lower trocar-cannula technique may be instituted. The release of any considerable amount of residual urine, say over 3 oz. is followed by a fall in blood pressure, a rise in the blood urea, an increase in the amount of urinary albumin and fall in the phthalein output. Frequently a chill and pyelonephritis ensue. Judd attributes these changes to renal congestion from sudden dilatation of the vessels as a result of release of pressure while Braasch is of the opinion that infection is at fault.

One of the most happy advances in urology was the introduction of a means of gradually and with smooth uniformity of decreasing the intravesical pressure by Von Zwalenburgh in 1920. This method has been elaborated upon by Foulds of the Mayo Clinic. An indwelling catheter is introduced fixed without emptying the bladder. It is connected to a long rubber tube the distal end of which hangs over into an irrigating tank which is elevated at such a distance above the patient that the urine barely trickles over when the patient takes a deep inspiration. The tank is lowered gradually 1 inch per day until the bladder is emptied. In this manner the pressure is slowly and not precipitately brought to normal. The blood pressure as shown by O'Connor falls gradually and smoothly to its point of maximum working efficiency. the urea, and phthalein tests indicate that further upset of renal imbalance is not occasioned but that the patient is thus put on drainage in a manner which

upsets him very little. Chills and febrile reactions seem to be much reduced by following this technique. In my own experience this Von Zwalenburgh-Foulds apparatus has been applied in a number of cases and to my mind it represents a distinct advance over interval catheterization or intermittent withdrawal of urine from an indwelling catheter. In cases where suprapubic drainage is used the apparatus can be attached to the suprapubic drainage catheter and gradual decompression of the bladder and kidneys be carried out just as in cases where the urethral catheter has been used.

The development of infection from the introduction of a urethral catheter especially in the presence of uninfected urine has been much discussed and is one of the great arguments in favor of the two stage operation. My own feeling is that it occurs chiefly in cases that are subjected to trauma of the urethra in introducing the catheter or where large amounts of residual urine have been suddenly allowed to escape. When chills, fever, and other signs of infection make their appearance and persist the consideration of suprapubic drainage is worth while and it is positively indicated when symptoms do not immediately subside on bladder irrigation and the forcing of fluids and alkalies.

The length of time a patient should be drained as a preliminary measure to prostatectomy is problematic. The renal function and general health come back to a variable degree and the time necessary varies with the individual. We have already mentioned the factors which must be taken into consideration. For the time being we have eliminated the prostate as a trouble-maker. It will wait and our judgment will require it to wait until the cardio-vascular, renal, and other systems have reached their maximum degree of efficiency. Where prolonged drainage over several months is necessary I feel that suprapubic cystostomy is indicated. Shortly after such an operation the patient may return home and under the care of his physician spend a great

part of the time that is necessary to allow his kidneys to "come back." This is especially true of certain types that are poor, senescent and whose hospitalization imposes an undue burden on the family. Frequent consultation of the surgeon and his co-workers should always be done so that a check up on the kidneys function and general condition can be made from time to time. At any odds the patient must not be rushed or allowed to rush himself. If the renal function will not return within safe operative limits it is well to remember that a live patient with a suprapubic fistula is better than a dead one with a well performed prostatectomy.

The renal function receives most discussion in the literature as the basis for determining when the patient is ready for operation. It resembles the basal metabolic reading in hyperthyroidism in this respect. Just what the limits for renal function should be cannot be set down with mathematical exactitude. A blood urea of 40 to 50 mg. or under per 100 cc. and a phthalein output of 35 per cent or over is desirable and the closer we can approach these *ceteris paribus* the lower will be our mortality rate. Sometimes cases of long standing will not reach the point of excreting as much as thirty per cent phthalein in two hours and the blood urea may range round 50 mg. or slightly over. If these cases have drained long and present no symptoms of uremia and the general condition is good they will usually go through operation successfully.

In the field of surgical technique we feel that no greater advance has come than the introduction of regional anesthesia into urology. This was initiated perhaps more than anything else by the work of Labat and Scholl in the Mayo Clinic during 1920 and 1921. Crowell, Lawsley and others have voiced their satisfaction with the method. It is ideal for both suprapubic and perineal technique. Young still prefers gas-oxygen as a routine using ether in the hypertensive or cardiopathic cases but it seems that regional anesthesia in preventing the general systemic depression consequent to general anesthesia,

is a real advance and is likely to displace to a great degree all others.

As to type of regional anesthesia the intraspinal technique has not proved popular. I have personally seen two deaths where stovaine was used. In Labat's hands with novacaine it seemed ideal. However the fall of blood pressure was severe and prolonged and frequently there was bleeding from small vessels that had been missed because of the low pressure at the operating table but which gave rise to alarming hemorrhage when the blood pressure returned a few hours later.

The caudal block induced by injecting 30 cc. of 2 per cent novocaine into the sacral canal or this combined with the parasacral blocking of the sacral nerves through the posterior sacral foramina has proved ideal in perineal work and when either of these is combined with infiltration of the abdominal wall suprapubic operations may be carried out without other anesthesia. In making the caudal injection one must be careful not to enter the subdural space but the technique of avoiding this is simple and easily learned. Parasacral block is somewhat more time-taking but insures more complete anesthesia than the caudal block alone. It is true that reactions sometimes occur from the induction of sacral anesthesia but these are usually transient and last only a few minutes. I have found reference to only two casualties from caudal block and in both of these the authors felt that they had entered the subdural space.

The operative technique of suprapubic prostatectomy has been fairly well standardized. There is a strong tendency to do the operation in one stage and under direct vision. Judd and Hunt of the Mayo Clinic are advocates of the method. The bladder is widely opened with a spreading retractor and the anterior bladder wall pulled forward with a second retractor when the prostate can usually be brought into view. Enucleation with finger or instrument can then be done under direct vision, control of actively bleeding points, proper toilet of the prostatic cap-

sule, and control of bleeding by the pack or the Hagner-Pilcher bag can be quickly executed in a deliberate manner. The scar of a previous suprapubic operation makes all this difficult and the operator has to work blindly in an effort to avoid reopening an area filled with low resistant avascular cicatricial tissue.

The perineal operation has recently been modified by Crowell, Hinman, and Young himself. The latter is now advocating enucleation through a unilateral incision on the left posterior aspect of the prostate. The incision is oblique, parallels the ejaculatory ducts but is sufficiently distant to avoid injury to them. The right lateral lobe and the median lobe are reached by incising the mucosa over them through this oblique unilateral capsular incision. Young feels that healing is quicker, that there is less tendency to structure formation, and that the ejaculatory ducts and the external sphincter are positively protected by this technique.

Suprapubic and perineal advocates continue to wage war in the literature. The battle is almost drawn but the perineal prostatectomists led by Young and his school probably have slightly the better of the argument from the standpoint of statistical data. Both methods of approach give a mortality well under 5 per cent conservatively speaking and they probably differ only 1 or 2 per cent in most statistics reported, when the operation has been carried out by experts. The perineal route seems physiologically preferable in that it offers dependent drainage, avoidance of prevesical space infection, probably less shock, and affords opportunity for packing the prostatic fossa from below up. The technique is however fraught with the dangers of incontinence and injury to the rectum and I feel on the whole that it will prove less satisfactory in the hands of the majority of urologists who have at hand a simpler procedure which if not actually as ideal as perineal prostatectomy will approach this ideal as a limit.

The post-operative care of prostatic patients and the method of dealing with complications has undergone little

change. Crile's dictum of fluids and more fluids" in hyperthyroid cases finds its counterpart in Young's advocacy of fluid in large quantity by every avenue of approach, orally, subcutaneously, by rectum, and by vein. Drainage and elimination are the key words to the treatment.

The mortality ever diminishes. Young reports 1049 cases with 3.4 per cent mortality and no deaths in the last 198. Cecil reports 100 cases with 2 deaths and Crowell in 1919 reported 100 consecutive cases without mortality. These end results are brilliant and show that it is possible to rob senescence of one of its terrors. In their achievement we realize how great the need is of cooperation between surgeon, internist, and clinical pathologist and what wonderful possibilities lie ahead when they can thus work in coordination. The treatment of prostatic hypertrophy that counts is the medical relief of the condition which the enlargement of the gland has produced before the gland itself is removed.

In conclusion I wish to present three cases that have recently come under my observation at the Lewis-Gale Hospital Clinic as they show certain phases of the treatment outlined above which may be illustrative.

Case 1.

J. B. age 83. Symptoms of obstruction present past twenty years. Acute retention three weeks before admission. Again five days before. No relief and has voided only slight amounts since. Effort at catheterization by family physician not successful. Admitted LGH Clinic 10-20-23. Stiff rubber catheter inserted and attached to VanZwalenburg apparatus. Blood urea 60 mgm. Phenolphthalein after decompression 45 per cent. Blood pressure 128-70. Decompression over three days. No reaction but great relief. Six days later the blood urea was 48 mgm. and the phenolphthalein 60 per cent. The patient was allowed to drain for nine days at which time the blood urea was 26 mgm. and operation was performed with one stage suprapubic enucleation under transsacral and caudal block anesthesia with ab-

dominal wall infiltration. The patient had no reaction, bleeding was controlled with a pack of plain gauze, and the temperature during his stay in the hospital was above 100 only once. The patient was dismissed 19 days after operation, wound healed, voiding freely and general condition excellent. The urine showed a moderate amount of pus from the time of admission to the time of discharge from the hospital.

Case 2.

J. D. age 69. History dates back for fifteen or twenty years. Old history of cystitis. Acute retention with pain during past month. Paradoxical incontinence. Attempts to catheterize during twenty four hours before admission were unsuccessful. Admitted LGH Clinic 1-7-24. Firm No. 18 F rubber catheter introduced on an obturator without trauma. Attached to Van Zwahlenburg apparatus. Blood area 41 mgm. Blood pressure 130-90. Decompression over two days. Phenolphthalein 50 per cent. No febrile reaction and the blood pressure and other examinations remained unchanged. In ten days the blood urea had dropped to 25 mgm. and the phthalein to 60 per cent while a purulent urine had been cleared up to some extent by daily irrigation of the bladder with hot permanganate solution. Operation was done by the open one-stage operation under parasacral and caudal anesthesia with abdominal wall field block. No pain. Slight reaction which lasted about five minutes. No post operative reaction. Blood urea rose to 32 mgm. Temperature never over 100. Suprapubic wound healed on 18th day. Patient discharged from hospital cured on 24th day.

The above cases are examples of long continued hypertrophy with history of acute retention and moderate renal impairment. I might be criticized for delaying operation so long in case 2 but as long as he continued to improve I felt he should wait, even though his renal function tests were within the operative limit.

Case 3.

W. E. age 73. Five year history of

difficulty and nocturia for 10 years. Now paradoxical incontinence and suffering. Bladder greatly distended past month and especially past week. Has not been catheterized. Admitted LGH Clinic 1-7-24. Blood urea 130 mgm. Blood pressure 130-85. Stiff soft rubber catheter passed on obturator guide and catheter attached to Van Zwahlenburg apparatus. Decompression over three days. Then phenolphthalein 10 per cent. Blood urea 45 mgm. Drainage since through indwelling catheter. On 9th day of drainage the phenolphthalein was 15 per cent. The specific gravity has run from 1005 to 1007 and the patient has been putting out about two litres daily. On the 20th day the phthalein output was 45 per cent. The patient had a myocardial upset and developed edema. His blood urea went to 48 per cent and the phthalein output diminished to 25 per cent. On digitalis therapy the edema quickly subsided the blood urea has since shown two readings of 37 mgm. one week apart and we now consider him fit for operation.

As soon as the patient becomes used to the indwelling catheter he is encouraged to get out of bed daily and as soon as possible after operation usually about the fifth day he is gotten up in a chair. During the preoperative regime the patient takes one to two glasses of water during each of his waking hours. The nurses chart the water intake on all cases.

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REPORT OF AN UNUSUAL CASE OF BILATERAL NEPHRO-LITHIASIS. WITH SPECIAL REFERENCE TO BLOOD CHEMISTRY AND RENAL FUNCTION.

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From a survey of the following case, we may appreciate more keenly two things: one is the miraculous resistive and reactive power possessed by the human body toward the ravages of disease; the other is the well nigh indispensable role played by the laboratory in modern medicine and surgery.

The patient, a white male, was admitted for treatment on January 9th, 1922. The age was given as fifty-nine years.

Recent, sharp, transitory attacks of pain in right kidney region radiating to flank and groin. More or less constant seizures of lancinating pain in the same region on the left side which has existed for some years. Frequent and painful urination for the past six weeks.

Past History: Infantile paralysis at an early age which left both lower extremities deformed to such a degree that locomotion has been seriously impaired. Typhoid of long duration in early manhood which was followed in six months by twinges of kidney colic chiefly confined to left side. Hurt in railroad

wreck at age of twenty-five which resulted in twisted and badly curved spine.

Present History: Thirty years ago began to feel pain in left side which simulated kidney colic and which, on several occasions, was of an intensity to necessitate the use of opiates for relief. For the past five years the patient has been remarkably free from kidney symptoms. Recently, he has been rapidly losing vigor, has become sleepy and dormant and notices a dull, constant sensation of soreness in the left side. The urine has become filled with pus and has an offensive odor. The patient voids quite freely both during the day and at night. The act is accompanied by considerable pain.

Physical Findings: Patient is deformed. Pronounced lateral and backward curvature of the spine. Lower extremities undeveloped. Feet extended on ankles. Talipes varus of both feet..

Color bad, white. Mucous membranes pale.

Lipoma, size of a large grape fruit, over left kidney angle. Abdominal walls fat and flaccid.

Genitals infantile. Maximum calibre of the urethra No. 19F. Urethra sharply angulated at the triangular ligament making instrumentation very difficult. Posterior urethra intollerant to instrumentation. Bleeds quite easily and freely. Prostate and seminal vesicles are normal in size.

Blood pressure 140 over 75.

Laboratory Findings: Urinalysis.

No acetone or diacetic acid.

Trace of albumen.

No sugar.

Field covered with pus cells. Scattered red corpuscles.

Blood: Creatinin 5.16 mgm. per 100 c.c. of blood.

Urea nitrogen 20.0 mgm per 100 c.c. of blood.

Blood Wassermann negative.

Leucocytes 9000. Small lymphocytes 40 per cent, large lymphocytes 5 per cent, large mononuclears 2 per cent, polynuclear 51 per cent, transitional 2 per cent.

Total phthalein output from both kidneys (collected by urethral catheter); first hour 00 per cent, second hour 3 per cent.

X-ray Report: Medium sized calculus of irregular outline in the left renal pelvis. Enormous calculus in right renal pelvis. Enormous calculus in renal pelvis which is rounded and smooth below to conform to the outline of the pelvis and shows multiple bifurcations above to fit into the indentations of the calyces. No other pathology noted.

Diagnosis: Bilateral renal calculus complicated with acute cystitis.

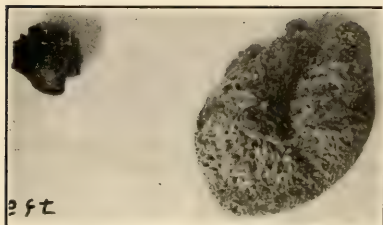
Owing to the high creatin content, the patient was immediately put on a non-nitrogenous diet, free diuresis and

this—an expedient which in no manner interferes with the phthalein test. The bladder is distended with a 4 per cent solution of sodium bicarbonate. When the urine containing the phthalein is ejected into the alkaline medium, it appears pink. The pink spurt may then be followed to the point of vesical entry thus permitting an approach to the ureters.¹

The laboratory report showed pus and a trace of albumen on the right side. Function test gave an appearance time of seven minutes with an output of 25 per cent or one-half of the total amount from both kidneys. The clinical data being fairly complete and the urethra being decidedly intolerant to repeated instrumentation, no attempt was made to secure a function report from the left kidney per ureteral catheter.

On January 23rd, the patient went to operation. It was decided to attack the two kidneys at separate times and, since it seemed possible that the right kidney would have to be removed on account of the damage which had probably been wrought by the great calculus in its pelvis, the left kidney was freed of its foreign body first. The greatest difficulty of the operation was in dodging the lipoma situated over the kidney angle. This neoplasm was too large and too well supplied with blood vessels to permit its removal while the condition of the patient was in the present debilitated state. The operation was done as expeditiously as possible in order to improve the chance for recovery.

The patient went through an uneventful recovery. Once the kidneys were stalled but they were brought into action by the hyperdermic administration of spartein sulphate in one grain doses every three hours. At first glance, this dosage seems to be enormous. *Materia medica* gives the dose as one-fourth grain cautiously increased to a maximum of one grain. Stuart McGuire, however, recommends one to two grains every three to six hours². Employed in this manner the drug is an invaluable stimulant to lagging kidneys. Smaller dosage does not seem to have much effect in this respect.



Left

Right. Weight 1385 gr.

thorough alkalinization. On January 20th the creatinin had dropped to 1.54 mgm. per 100 c.c. of blood while the urea nitrogen fell to 17.935 mgm.

On January 18th the total kidney function was again estimated and showed an output of 51 per cent for the two hour period. The appearance time was 7½ minutes. On the 20th, the patient was cystoscoped and the right ureter catheterized. The urethra was too small to permit the passage of an instrument carrying two catheters. The bladder was intensely red over the entire base and, in this angry pus covered area, the ureters were very hard to locate.

In speaking of the difficulty of locating the ureteral orifices, it may be of interest to the cystoscopist to mention a recent, simple expedient to obviate

The patient felt so well after the first operation that he delayed reporting for the second experience. His diet was carefully regulated and blood waste products estimated from time to time. Nine months later, however, pain in the right side developed. It became intense and paroxysmal. He was readmitted on December 8th, 1922. Previous to readmission, he had been on a non-nitrogenous, diuretic, alkaline regimen for several weeks.

The total phthalein output from both kidneys was again 51 per cent. Function on the left side obtained per ureteral catheter was 25 per cent. We see again that the right kidney was sharing equally in the total output.

Creatinin content 1.46 mgm per 100 c.c. of blood.

Urea Nitrogen content 17.35 mgm per 100c.c. of blood.

The operation showed that the right kidney, though rather small, was in fair condition. The stone was removed almost entirely through the pelvis. A small incision, only, had to be made in the lower pole posterior to the midline in order to liberate the encumbrance. As much of the redundant pelvis as possible was excised to prevent leaving a baggy sac. Even at best, the reconstructed pelvis was most abnormal in size and, of course, would be a possible site of future infection.

The stone weighed 1385 grains and seems to be composed of uric acid. I do not know what the weight or dimensions of the largest single renal calculus on record is, but the specimen presented tonight is certainly of interest in so far as size and weight are concerned.

Since the kidney appeared to be in good shape, and, since, following the first operation, the creatinin and urea nitrogen content remained high, thus showing that the patient needed all available renal tissue to successfully eliminate these waste products, the organ was left in place.

Experience gained by the study of surgical pathology in cases of this kind, would seem to indicate that nephrectomy was the proper procedure to fol-

low. Calculi, which have been present as long as this specimen must have been in forming and which have attained such gigantic proportions, generally ruin a kidney both structurally and functionally. Drainage is interfered with, stasis follows, infection sets in and, as a result, the substance of the kidney is annihilated so that, in the end, the foreign body is enclosed in a shell-like semblance of what was once a normal kidney.

The surgeon, then, has every reason to expect that he will be called upon to do a nephrectomy. This was true in this case. The smaller calculus in the left kidney was taken out first so that that kidney would be more fully capable of taking care of the entire urinary excretion when the right nephrectomy should be done. On opening the left pelvis, in the first operation, it was found that it, together with the contiguous renal tissues, had been considerably damaged by contact with the rough jagged surfaces of the stone.

It must be remembered also that, in spite of the seeming paralyzing detriment under which the right kidney was laboring, it was excreting 50 per cent of the total phthalein output. Consequently, when the right kidney was found to be in fair shape; when the previous high creanine content was considered and, when the fact that an aged and infirm patient would be compelled to rely entirely on a remaining kidney which was also impaired, was borne in mind, the intention to perform a nephrectomy was discarded in favor of pyelotomy.

Again the recovery was uneventful. The patient is living today and is enjoying better health than has been the case for twenty years. He does a full day's work in an office and seems to thrive upon it. However, when night comes he is inordinately sleepy and will sleep ten hours without stirring. The urine contains a trace of pus and albumen but cystitis no longer worries him. The urea nitrogen and creatinin content runs about normal. They are easily controlled with diet.

The next point of interest in this case

is the anomalous ratio between the creatinin and urea nitrogen content of the blood.

The phthalein test of Roundtree and Geraghty, introduced in 1910³, revolutionized the diagnostic and prognostic phase of urological surgery in so far as the determination of the ability of the kidneys to excrete is concerned. Since that time, in the treatment of nephritis and diabetes, the internist has called attention to the inestimable value of that side of blood chemistry which relates to the retention of metabolic waste products which should normally be eliminated by way of the kidneys. More recently, the surgeon has found that it is advisable to take advantage of blood chemistry findings in diagnosis and prognosis of urological cases. Especially is this true in prostatic and renal surgery.

Of these elements of pathologic blood chemistry urea nitrogen and creatinin are in point with the case being presented.

A fairly comprehensive idea of the eliminative ability of the kidneys may be gained by the quantitative estimation of urea nitrogen, uric acid and creatinin in the waste product group together with the blood sugar content and the carbon dioxide combining power of the blood. The last two tests are of value in detecting hyperglycemia or in anticipating an acidosis.

Urea nitrogen is for the most part an exogenous waste product of protein metabolism. It is taken into the body from the outside in the shape of food. It is normally present in the blood in an amount ranging from 12 to 15 mgm. The amount of urea nitrogen seems to be confined to within very narrow limits in health. When it reaches 20 mgm., as was true in this case, it is clearly indicative of disturbed eliminative power when other findings show that it is not merely a transitory interference with the dietary balance. When it ranges between 25 and 30 mgm., the advisability of operation may be gravely questioned. Above the mark of 30 mgm., the surgical risk seems to be prohibitive.

Creatinin is an endogenous waste

product, i. e., it is created within the body apparently by muscular metabolism. The normal content per 100 c.c. of blood is .72⁴. As a rule creatinin does not increase until the blood urea reaches a high figure. It is more readily eliminated than uric acid or urea and, for this reason, creatinin is a more certain index of insufficiency than the other two. Should the figures go above 3.5 mgm., the condition is to be regarded with apprehension. A content of 5 mgm. or over points to an early end unless the figure is quickly lowered by treatment. Operation under such conditions is entirely contraindicated.

In comparing the creatinin and urea nitrogen of the blood in cases which already give some evidence of insufficiency, it may be noted that creatinin being of almost exclusive endogenous origin, is less influenced by the intake of protein than urea and constitutes a most satisfactory criterion as to the deficiency of the kidneys, while urea, being largely exogenous in origin, is more readily influenced by dietary changes and constitutes a most sensitive index of the response to treatment.

We see, then that the functional elements which enter into the diagnostic complex of this case deal with the output of phthalein and with the retention of urea nitrogen and creatinin. Naturally, the estimation of urea nitrogen and creatinin does not point to which kidney is at fault should but one be involved. These tests simply show that something is wrong and give a fair determination of the extent of functional insufficiency. They have no selective or discriminatory power to single out an erring kidney. They give no comparative data concerning these two organs. Fortunately, ureteral catheterization, which permits the segregation of the output from both kidneys, will, in conjunction with the phthalein test, indicate the offending member if only one is responsible or will reveal a comparative morbidity if both are pathological. When the sum of the functional data is totaled, the surgeon has a relatively firm base upon which to found his conclusions.

Thus we find in the case here presented, that death would have been an almost inevitable result had the patient gone to an early operation after admission. The abnormally high creatinin content and the excessively low phthalein excretion would indicate a lethal exodus. It is true that the urea nitrogen percentage was not high; but the anomalous and staggering creatinin index, 5.16 mgm. as against the normal of .72 mgm., signified that the long suffering kidneys had all but balked under the heavy obstructional and eliminative load. The very low phthalein reading of only 3 per cent over a two hour period abundantly confirms the inferences drawn from the blood chemistry findings.

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NEO-SILVOL IN GASTRO-ENTEROLOGY.

By N. Alpert, M.D., Baltimore, Md.

Within the limited space of a single article it is impossible to fully discuss the merits of Neo-Silvol as applied to its widest range of use. This form of silver probably owes its unique properties to its similarity to a true colloid. It has been the subject of discussion in various medical journals by the eye, ear, nose and throat specialist as well as the urologist, and appears to offer certain advantages over Silvol, Argyrol and other similar preparations.

So far as I can ascertain, Neo-Silvol has not been reported on as having been used in gastro-enterology although it seems to present equal advantages in this practice. The following two cases are representative of a number of similar gastro-enterological patients in which Neo-Silvol solution has been used with most gratifying results.

Case No. 1.

Mrs. F. G., age 30. Russian Jewess. Married, mother of three children, normal delivery, children all living and well. Was referred to me on July 1, 1923. Family history: Father died, age and cause unknown. Mother died at age of 50, of bowel trouble. Family negative to tuberculosis, cancer and cardiorenal disorders. Past history: Measles at age of 7. Pertussis, vericella and parotitis in early childhood, uncomplicated. Severe attack of la grippe at the age of 12. Puberty at age of 14. Then enjoyed good health until age of 20, when suffered an attack of "spotted typhus," duration 28 days. Negative to other infectious and contagious diseases. Normal habits. No history of injuries or operations. No dietetic errors.

Present illness: Patient dates present difficulty to six months after recovering from typhus. The chief complaint was a severe form of constipation, followed by diarrhea, with passage of excessive quantities of mucus in the form of flakes and shreds. Cramps and pain in the intestines. The attacks occurred at first every two months, lasting for several days. Then every month, and finally every two weeks until patient was compelled to remain in bed. The cramps and pain disappeared after each bowel movement. Patient lost weight, appetite poor, at times nauseated, fullness and distress in lower intestines, especially after meals. Exhaustion upon slightest work, fatigued, worried and restless.

Physical examination: No abnormalities of scalp and forehead noted. Normal extra-ocular response. Ear, nose and throat negative. Tongue furred. Pharynx moderately injected. Tonsils small. Thyroid not enlarged. Other glands not palpable. Chest expansion good. Heart normal in size. An extrasystolic in the aortic area, a hemic murmur in pulmonary area, heart rate 78 per minute. Pulse irregular and weak, rate 70. Abdominal wall distended. Liver and spleen normal. Gaseous fermentation in lower intestines. A "doughy mass detected in the colon. Ab-

dominal, knee and arm reflexes exaggerated.

Laboratory examination: Urine: Specific gravity 1015. Reaction, acid. Albumen 2 plus, Phosphate 4 plus, Indican 4 plus. Other chemical reactions negative, and microscopical negative. Hemaglobin 80 per cent. Blood pressure 125 systolic. R. B. C. 4,500,000. W. B. C. 4,000. Anhydremia present. Color of mucoid material, gray. Histologically, membranes consist of a homogenous ground substance interspersed with intestinal debris; degenerated epithelial cells, undigested food, leucocytes and mixed bacteria. Case was diagnosed as chronic mucous colitis.

Treatment: Patient was put upon diet recommended by von Noorden. Castor oil was administered every other day, an hour before breakfast. Alternate intestinal irrigations, one day with 5 per cent solution of boric acid, next day with sodium bicarbonate, followed by 1 per cent solution of Neo-Silvol introduced with soft rubber tube, the patient resting for ten minutes, patient had severe cramps, could not expel Neo-Silvol solution, and same colon tube was inserted to withdraw the solution. Patient expelled much gas, and upon the withdrawal of the tube discharged large lumps of collected mucus. The next time, Neo-Silvol was increased to a 1½ per cent solution. After the irrigation, patient was placed on left side for fifteen minutes and after the expired time a large amount of collected mucus was expelled with no pain. Neo-Silvol changed in color, turning slightly green. Above treatment continued every third day for several weeks with steady increase in percentage of Neo-Silvol used, and patient made to retain the solution for ten to fifteen minutes. This was done until the mucus disappeared. Nuxvomica and belladonna were administered internally before each meal. The fact should be stated that Neo-Silvol always changed color from white to slight green, after first injection.

Patient apparently made complete recovery. The constipation was relieved by rectal dilators and abdominal massage.

Case No. 2.

Mr. C. W. Age 28. Russian Jew. Occupation, tailor. Was referred to me on September 10, 1923. Family history: Father and mother living and in good health. Negative to tuberculosis, cancer and cardiorenal disorders. Past history: Measles at age of 3, uncomplicated. Negative to other infectious and contagious diseases. Patient smokes moderately, does not use drugs, was operated upon for appendicitis in 1916, while serving in Russian army.

Present illness: Patient dates present difficulty to six years back, while in Russian army, when he was troubled with nausea, belching, vomiting at intervals after meals, constipation, and localized headaches in central portion of head. Appetite poor, fullness and distress in stomach, and at times pain in epigastric region after meals. Denies venereal diseases.

Physical examination: A large scar noticed on right temple. Eye, ear, nose and throat negative. Tongue projects in midline, slightly furred and reddened. Tonsils small and injected. Thyroid not enlarged. Other glands not palpable. Chest expansion good. Heart, lungs and chest negative. Abdominal wall distended. A diffused sensitiveness to pressure in region of stomach. Liver and spleen normal.

Laboratory examination: Blood and urine negative. Hemaglobin 80 per cent. Blood pressure 118 systolic. Analysis of gastric contents shows a slight decrease of hydrochloric acid. Other digestive elements normal. Sediment obtained in the morning from a fasting stomach, contained shreds of gastric mucosa, showing hyperplasia of the glands and little degeneration of individual cells. Function of stomach good. Four or five hours after meals patient vomited digested food, intimately mixed with thick, ropy mucus. X-ray examination negative. Case was diagnosed as chronic gastric catarrh (chronic gastritis.)

Treatment: A soft, pulpy diet prescribed. Stomach was washed with soda bicarbonate one day and two days later a 2 per cent solution of Neo-Silvol

was injected, using the same stomach pump. Upon pumping the stomach the funnel of the tube became clouded and stopped up with a great deal of mucus and a cotton wrapped wire was inserted to clean the tube. The tube was withdrawn and the patient vomited the solution of Neo-Silvol together with a large amount of adherent mucus. Six days later, the treatment was repeated with a 3 per cent solution of Neo-Silvol. The accumulation of mucus in the funnel of the tube was much less than formerly. After withdrawing the tube, patient vomited the solution which had turned slightly green and which contained non-adherent mucus. Two weeks later, another stomach wash was administered, using a 4 per cent solution of Neo-Silvol. No accumulation of mucus was found in the funnel whatever. After withdrawing the tube, patient vomited the solution which again had turned slightly green and contained very little mucus. Patient was given diluted hydrochloric acid, abdominal massage, and the constipation was relieved with rectal dilators. Appetite improved, and in last two months patient gained in weight, no gastric disturbances whatsoever.

Conclusions:

From the above, it may be seen that Neo-Silvol could be used with distinct advantage in gastro-intestinal disturbances where a non-irritant silver germicide is needed. It has an advantage over other silver preparation; it is bland in all concentrations. I used a small percentage because it was my first experiment with the drug. As I said, Neo-Silvol has an advantage over other silver preparations in that it does not produce dark stains, which seem to be the most characteristic feature of other silver preparations now in use. Even the change of color does not stain. We can always see the solution when it returns from the injected place, and can determine what the drug carries with it.

2350 Eutaw Place.

LAWRENCE HOSPITAL, CASE NO. 2251., WINSTON-SALEM, N. C.

L. W. D. White man age 45, farmer, married, entered hospital 12-23-23. Chief Complaint: Bladder trouble. Present illness: Six weeks ago began to have pain in epigastrium, fullness and belching after meals, weakness and loss of appetite. Three weeks ago he began to have "shooting-lightning" pains through abdomen and back, gradually getting worse. At this time began having frequency and burning urination. Four days ago had acute retention. About this time unable to walk. All these symptoms increased until present time with severe "rheumatic" pains in legs and arms so that he cannot sleep at nights.

Past history: Of no importance.

Habits: Has been a heavy drinker all life and especially for past year.

Alimentary: Appetite poor for six weeks. No indigestion until present illness. Bowels always constipated.

Pulmonary: Neg. Cardiac, Neg.

Physical Examination: A well nourished and developed middle aged white man showing almost complete helplessness. Head: Scalp, and ears: Normal. Pupils show slight inequality and sluggishly react to light, but active to accommodation. Mouth: Teeth show caries and moderate pyorrhea. Neck, Neg. Chest, well developed. Symmetrical. No dullness nor rales. There is a hard, fixed, egg sized tumor mass over sternum opposite 5th chondro-eternal attachment which he says followed a blow three years ago. Heart: Normal impulse. No shock nor thrills. No murmurs nor accentuations. Pulse: Rapid and weak but regular. Vessel walls thickened. Abdomen: Neg. G. U. Neg. Skin: Pale, thin, and clammy. Bones and Joints: Neg. Neuro-muscular. Patient seems to be of low mentality, slow at comprehension. Cannot move himself in bed. Both legs paralyzed with muscular weakness in right arm. Both legs and arms are extremely sore and painful, to passive motion. Patella reflex, absent on right and slightly perceptible on left.

Paresthesia and hyperesthesia over hips and abdomen. Normal astereognosis. No Babinski nor Kernig. Bowel and bladder completely paralyzed.

Laboratory.

Urinalysis: Dark amber, a red color, heavy precipitate, specific gravity, 1015-1020, acid reaction, albumen plus 2. No sugar, and much pus, continually until death. Spinal fluid Wassermann, Neg. 12-24-23. Spinal puncture, no pressure, fluid clear, microscopic showed 30-40 cells per field, mostly lymphocytes. 1-8-24. All symptoms have continued to progress, until large decubitus ulcers appeared. The bladder showed severe cystitis, and almost entire body seemed to be paralyzed and patient died.

Diagnosis: Alcoholic Neuritis.

Summary.

1. This patient had been drinking "blockade" whiskey, symptoms developed rapidly and the outcome fatal. Whether the injury is a result of whiskey, or of the other ingredients of "home-made" or "Monkey Rum" drinks which are used mostly now, such as certain poison alcohols, is unknown.

2. The case also supports the theory of specific predilection of tissues to receive the blow of certain irritants, as in other cases of alcoholism the effect of the alcohol has been upon the kidneys and liver. This fact has been borne out by some interesting experiments by Dr. Wm. DeB. MacNider of the University of N. C., which will be published later.

3. Again the case is interesting because at the time the patient was first seen, both cord and peripheral nervous systems were involved, which being primary is uncertain, but symptoms would certainly indicate that the primary lesion was in the peripheral nerves and as the toxemia was overwhelming there was a rapid dissemination upward with myelitis of the cord and even brain destruction. However, the patient died and that "Monkey Rum" is a dangerous beverage is borne out by this case.

A "Delano Nurse" in Buchanan County, Va.

Miss Mary Emily Thornhill is the first nurse to be assigned to Virginia under the terms of the will of the late Jane A. Delano, director of Red Cross Nursing Service during the World War. Miss Delano left a fund with which to pay special nurses who are assigned to territories where the need for educating the population in primary public health rules is great. Miss Thornhill has been detailed to Buchanan County which, with a population of 15,500, is said to have the highest birth as well as the highest death rate of any county in Virginia. There are only two physicians in Buchanan County in general practice and two physicians associated with lumber companies—four in all—and no public health nurses. This is an isolated mountainous section in which travel is done by horseback.

Miss Thornhill, a graduate of the Children's Hospital, in Washington, is exceptionally well fitted for her new work. She saw active service during the World War and later took a special course in Public Health Nursing in Richmond. Since then, she has been interested in working for crippled children in Alexandria and vicinity. She reports that the people in Buchanan County are already meeting her more than half way in their eagerness to learn how to improve their living conditions.

Miss Thornhill is the fourth "Delano Nurse" to be appointed by the Red Cross in the United States, the others being located in Alaska, on the coast of Maine, and at Highlands, N. C.

SOUTHERN MEDICINE AND SURGERY

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J. C. MONTGOMERY, M. D. } *Editors*

CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

Conflicting Dates of the North and South Carolina Meetings.

It is indeed very unfortunate that the meetings of the State Societies of these two states should be held at the same time.

Many men get profit from and desire to attend both meetings and many men would attend both meetings if it were possible.

There is no reason whatever why either state could not just as conveniently hold its meeting one week or two weeks earlier or later. It is our understanding that some years ago each society desired a very prominent guest from a distance and in order to secure him it was necessary that the meetings be held the same week which would enable him to address both meetings at the same trip. North Carolina then fixed her dates to suit the occasion and just let it continue that way because no one has asked for a change.

North Carolina should fix the date for next years meeting at least one week previous or one week later. Preferably there should be more time than this between them. It is our opinion that North Carolina should hold its meeting in May.

It is agreed by all that the exhibits are an important feature of any medical meeting. Doctors throughout the year look forward to the time when they can see and examine new instruments and new books. This feature has in fact almost as much educational value

as the hearing of papers.

Without exception the representatives of the various instrument, book and pharmaceutical concerns that would attend one meeting are the ones who should and would also attend the other meeting. Conflicting dates causes both states to lose in the exhibit feature and adds much additional expense to the exhibitors.

There is no excuse whatever for these conflicting dates and many reasons why it should not be.

Insulin and the General Practitioner.

The therapeutic value of Insulin for controlling Diabetes is a conspicuous success. Even in so short a time since its introduction there are thousands of people living today who would not be except for Insulin. That Insulin, however, is not a cure for Diabetes has been as emphatically proven. Some advance cases, especially where the eyesight has been effected, have not seemed to be even benefitted by its use.

With all its successes it has its limitations, and these should be understood in order that unjustified expectations be not aroused or unwarranted promises made. The regular diabetic diet must not be abandoned or followed carelessly. We must caution ourselves concerning the actual dangers of too free and careless administration of Insulin. The profession at large, the general practitioners, are the ones who will carry the greatest responsibility and it is for these men to master the details of using this agent successfully.

Insulin is an extract derived from the Islands of Langerhans of the pancreas. When given hypodermically, (and it cannot be administered in any other way) it corrects the metabolic disturbances occurring in diabetes mellitus; it is the only known means of treating this condition when dietetic regulation fails to control such disturbances. Its administration has been tried in every conceivable manner but absolutely no way except the hypodermic route yields the slightest benefit. Even in this matter of technic great care should be experi-

enced since intra-muscular injections must be avoided and also it must not be made too near the skin surface.

The matter of dosage must be adjusted to the needs of each patient. If an insufficient quantity is given the diabetes is not properly controlled, whereas if too much is given there is danger of hypoglycaemic shock which may be severe enough to cause death.

It is obvious that the intelligent application of this pancreatic extract requires a knowledge of the perverted carbohydrate metabolism as it occurs in diabetes and an understanding of the other methods of treatment resorted to in this condition, since Insulin is not employed alone but in conjunction with them. Improper use of Insulin may kill the patient by over dosage, while on the other hand if too little be given not correctly adjusted to the patients diet and individual needs undue suffering will result.

There is no disease requiring more detailed knowledge for its successful treatment than diabetes mellitus.

In Ontario the government is establishing classes of instruction for practitioners to learn about Insulin, the tests and the behavior of the patients and it also supplies to the profession Insulin free of charge for the use of poor patients.

SURGERY

A. E. Baker, M. D., Dept. Editor

Post-operative Abdominal Adhesions have been unjustly sinned against. Any discomfort that may be experienced in the region of an operation is considered by many as, of course, due to adhesions. Experience has taught us that only adhesions, which interfere with the function of the abdominal organs are a menace to health. To illustrate, recently three cases at different intervals have been referred for operation to relieve adhesions, which resulted from appendectomy in each case. Routine examination showed in one case small calculus in right ureter; in the second case,

chronic cholecystitis was the cause of the symptoms. The gall-bladder removed, the patient had no return of the symptoms; the third proved to be a neurosthenic. In the American Journal of Surgery, March 1924, Dr. Haynes' paper on Intraperitoneal Adhesions is of interest. He states that:

Our consideration will be limited to pathologic adhesions, eliminating all those various modifications of the usual peritoneal folds and attachments that are due to developmental variations. We are thus restricted to a discussion of those bands of new formation and direct agglutination of peritoneal surfaces that, by their interference with the function of the abdominal organs, give rise to definite symptoms.

The causes of such adventitious bands and attachments are briefly these:

1. Adhesions due to infections.
2. Adhesions resulting from traumatism.
3. Adhesions developing from blood clots.
4. Adhesions arising from pressure, as from the presence of tumors.

1. Under the first heading are grouped the results of all infections arising within the hollow viscera as the gastro-intestinal tract, Fallopian tubes and gall-bladder. Whatever the primary disease may be the terminal result by which bands, membranes and direct agglutination of these viscera to each other or to their adjacent peritoneum-covered neighbors is produced, the causative factor is infectious germs or their toxins. These are chiefly the colon bacillus, the gonococcus, and in other instances the severer type of pus-producing organisms as the pneumococcus, staphylococcus, streptococcus, etc. The peritoneal reaction produced by all of these various germs, is so severe that the so-called permanent type of adhesion is produced. The effects of such adhesions are due not to the adhesions per se, but to the interference they exert upon the function of the viscera involved in the process. Concrete examples are numerous and comprise the great multiplicity and extent of abnormal attach-

ments found in the region of the appendix, the gall-bladder and, in women, the pelvic organs. Other situations for the development of adhesions are about the stomach and duodenum from ulcers, occurring in these viscera, and the results of a suppurative process in the liver, spleen, ovaries and uterus.

2. That traumatism may be the cause of extensive peritoneal reaction is well known, but whether due to external violence, as to the intestine, or whether the result of operative procedures within the abdomen, the permanency of the adhesion depends upon whether infection is present or whether raw surfaces are produced that are left to grow fast to a contiguous viscus. Except in the last condition, if no infection be present the adhesions resulting from moderate trauma and aseptic operations will soon completely disappear. The adhesion resulting from a raw surface and adjacent viscus will be permanent.

3. The blood within the peritoneal cavity, if sterile, will leave no permanent attachments. However, blood clots within the substance of the viscera and near their peritoneal surface or just external to the parietal peritoneum usually result in the formation of a permanent attachment between the damaged area and any viscus adjacent to it.

4. Adhesion produced by pressure as from tumors or a hernial mass, depend, in the former, upon their size, position, interference with blood supply and infection (as from necrosis or supuration) and in the latter upon the amount and duration of such pressure.

Naturally the greatest frequency as to location, number and extent of adhesion is, in both sexes, in connection with the intestinal tract. In order of frequency these adhesions are found in and about the appendix and cecum, the gall-bladder, the duodenum and stomach, and the normal angulations of the colon and sigmoid.

In the female the next most frequent location for such adhesions is within the pelvis, the infection or irritation preceding from the tubes and involving some or all the pelvic viscera to a variable extent, the greatest number and

variety being due to infections resulting from childbirth, abortions (especially those induced by criminal intent) and the common source of infection, the gonococcus.

Symptoms depend upon the structures involved, the nature and extent of such involvement and causation.

The dense and extensive attachments often found between the liver and diaphragm and spleen and diaphragm usually give rise to no symptoms per se and are the discovery of the dead house or dissecting room.

Adhesions involving the pelvic viscera in women are held responsible for effects of such wide distribution and great variation in severity as to embrace almost all the symptoms referred to the pelvis or abdomen. On the other hand, it is a fact repeatedly demonstrated that a woman may have adhesions of the greatest extent and density in the pelvis without symptoms and come to operation because of some entirely new condition developed independent of the existence of such adhesions. However, while there may be no symptoms or the greatest number and variety, the usual symptoms connected with pelvic adhesions have to do with disturbed function, in the order of frequency, of the lower bowel, ovulation and the course, duration and degree of menstruation. One of the common sequelae of pelvic adhesions is the causation of ectopic pregnancy and sterility.

Urology

A. J. Crowell, M. D., Dept. Editor

Until recently, pyelitis was rarely diagnosed correctly. The bacteria causing the condition are usually the colon bacilli. The symptoms are fever and pain in the lumbar region, a polymorphonuclear leucocytosis, and pyuria. Some cases are chronic from the beginning. The pain, a dull ache with exacerbations, is constant in acute cases and is intensified by bimanual pressure. The second point of pain is where the ureter crosses the pelvic brim; this simulates appendiceal pain. Women should

never be operated upon for such pain until they have been given a cystoscopic examination. Tenderness is usually noted on vaginal palpation at the point where the ureter enters the bladder. The cystoscope will show a triangular area of erosion with the point at the ureteral mouth, and the ureter will spout cloudy urine.

Palliative treatment is a waste of time. The ureter should be catheterized and from 8 to 15 c.cm. of 10 per cent silvol or neosilvol instilled. The injection should be given gently and stopped if the patient complains of pain in the back. In acute cases the rule is immediate marked improvement in the temperature, leucocytosis, and comfort. In some cases one treatment is sufficient while in others three or four at forty-eight hours intervals are necessary. Even when one treatment suffices to clear up the symptoms it is wise to repeat the treatment once or twice. In pregnancy, pyelitis is nearly always acute. As these cases react well to the instillation treatment, the induction of labor is not necessary. In children one instillation of from 2 to 5 c.cm. is sufficient.

Exstrophy With Cancer of Bladder and Absence of Umbilicus.

Douglas P. Murphy, Rutherfordton, N. C. (Journal A. M. A., March 8, 1924), reports the case of a man, aged 49, who had an exstrophy of the bladder, complained of a painful lump in the right groin, and a smaller one on the right side of an exstrophied bladder. About seven weeks prior to admission, his rubber urinal began to leak. A few days before, two painful lumps developed, one in the right groin, and a smaller one on the right side of the bladder. Shortly after the patient noticed the lumps, he began to have pain in the left hip also, radiating down the right thigh. Microscopic examination of sections, taken from both tumors, led to a diagnosis of carcinoma. Murphy points out that cancer associated with exstrophy is a rare condition, and when present, occurs at the cancer age. Men are more frequently attacked than women. Hem-

orrhage is the most frequent and earliest complaint. Growth is slow, visceral metastases are rare, and inguinal involvement is not the rule. The region of the ureter, as a rule, is not invaded. The cylindric cell form is the most common, but squamous and mixed types occur. The accessibility, slow growth, absence of metastases and circumscribed nature of the tumor make it most suitable for the implantation of radium emanation.

Pediatrics

Frank Howard Richardson, M.D., Dept. Ed.

It is one of the functions of a department such as this, to call to the attention of its readers anything of special note that has appeared in the literature during the preceding month. When such an unusually interesting event takes place as the one that we mention this month, we feel that we are indeed fortunate in the opportunity of directing attention to it, as its local interest will specially commend it to the clientele of Southern Medicine and Surgery.

The Archives of Pediatrics is undoubtedly the most widely read and generally acceptable pediatric organ that we have in this country, being in a very real sense "the special journal of the general practitioner," as well as the organ to which the pediatrician looks for the most practical as well as the most scientific contributions to the literature of his specialty. It is, therefore, with considerable pride that the medical profession of this section can regard the action of the Archives, in turning over the whole of its regular March issue to the faculty of the Southern Pediatric Seminar, as a special number. In the past this journal has had, from time to time, a British number, a Western number, a Southern number, and a Vanderbilt Clinic number, as well as a yearly number devoted to the transactions of the American Pediatric Society. The fact that such a special journal should have singled out such an institution as the Southern Pediatric Seminar in this way, is an

earnest of the impression that the work of the very young post-graduate teaching organization has made outside of the South, as well as here in our midst.

In looking over the table of contents of this special issue, it should be noted that the type of contribution selected is not the article presented before the medical convention or the general or special medical society. It was felt that the South already had enough organizations of this sort, without adding another to the roster. The type of article here presented is exactly the type of contribution that was placed before the postgraduate students gathered at the Seminar from ten of the Southern states,—a simple, practical presentation of some important phases of the study and care of children, for the use of the general practitioner, and valuable enough to justify the time and expense entailed in foregathering here from the extremes of the Southland to get help with the everyday problems of general practice. That is to say, that while one need look for no epoch-making discoveries in medicine, one may expect to find some very valuable points that will be of very much assistance to him, if he deals with children at all in his practice. This was the criterion as to acceptability,—and anyone who consults the special number will feel that it was impartially applied.

It was almost more than a coincidence that the place of honor should have been assigned to William Patrick Cornell, formerly professor of pediatrics at Charleston, who at the time that the magazine was being made up was in vigorous health, and pursuing the practice of his profession with the whole-souled interest and genuine love of his work that had put him in the front rank, among our pediatric confreres in the State immediately to the south of us. Before it had issued from the press, Doctor Cornell had laid down his burden in the middle of one of his busy days of practice, and had gone with his clear eye and undimmed interest in quest of the Great Adventure. The children of the South have lost one of their staunchest friends; and the medical fraternity one of its brightest and

finest torch-bearers, in the passing of William Patrick Cornell.

Doctor Cornell's article on Acidosis is marked by the clear, cleancut style that marks his medical writing; and gives the Physiology of this clinical condition, together with the treatment of the five types noted, and illustrative cases to drive home his points.

Dr. Cornell's Successor as Professor of Pediatrics at Charleston.

Dr. R. M. Pollitzer, in his article on the New-Born, repeats his clinical lecture in a way that makes one feel that he is again on the bench of the amphitheatre in the medical school, studying a typical case of each condition described. So successful has he been in this sort of teaching at the Seminar, that it seems likely that he will be kept at just such an assignment permanently, no matter what other changes may be made in the teaching personnel and their work.

Dr. F. H. Richardson epitomizes much that he has written elsewhere, and that he considered at greater length and in more detail, at the Seminar, in his article on "The Technique of Breast Feeding." While many of his ideas are somewhat at variance with the cut-and-dried rules handed out to the fourth-year students in medicine, (vide the conception that a real doctor can learn much that is of value, from a mother, nurse, or old grandmother, in the management of breast-feeding!), they are at least worth trying out in that very accessible laboratory, the nursing baby.

Dr. C. V. Akin, assigned to the Seminar each year from its inception, by the Surgeon General of the U. S. P. H. S., takes as his text, "The Slogan of Child Hygiene is 'Protect and Prepare.'" His article, "Hygiene of Infancy," a condensation of his course of lectures on this subject, is a very masterly summing up of what we have to offer the infant of today. His "Minimum Standards" for the protection of infants forms a very fitting conclusion to a paper which explains these standards most clearly and convincingly.

"Dehydration," by Dr. Owen H. Wilson, professor at Vanderbilt, is a very practical exposition of the dangers of

this condition,—together with a perfectly simple method of preventing as well as combatting it.

Dr. J. Ross Snyder, in "Oral Hygiene," after dashing off one of his delightful tirades at the foibles of his professional confreres,—which no one who knows him ever gets offended at, but which are productive of immeasurable effect where effect is most needed, ends up by introducing his associate in the treatment of children, Charles B. Bray, D.D.S., whose paper, "The Necessity of Better Dentistry for Children," can be read not only in this number of the Archives, but as well in "Forecast," the popular magazine which asked permission to reprint it. Needless to say, he completely proves the point set forth in his thesis.

Dr. W. L. Funkhouser, head of the Pediatric Department, Emory University, Atlanta, considers "Congenital Feeble-mindedness." This subject, that is constantly brought before us in the youngsters brought to us in the course of general as well as of special practice, deserves just such careful consideration as it receives at his hands.

"Prenatal Care" is the title of a paper which contains the most important points made in his course of lectures, by Dr. Oren Moore, of Charlotte. The fact that these lectures of his were some of the best received in the entire course, makes them well worth the reading by any one interested in the problems of pediatrics, obstetrics, or general medicine. Another Charlotte man, Dr. Harvey P. Barrett, in "Colitis—a Pediatric Problem and a Challenge," brings before the readers a subject of interest over the whole South. Although not presented formerly before the Seminar, it was deemed sufficiently timely to be included.

"Congenital Syphilis: Prevention and Treatment," by Dr. S. H. Welch, Pediatric Syphilographer to the Alabama State Department of Health, is a review of the present status of Syphilis at birth, and its treatment.

As will be seen by the brief review given above, there is a pretty fair sampling of the field of pediatrics offered the reader whose interest is that of

giving the best he knows how to give to the youngsters he sees in the course of his general or special practice. The fact that the contributors, like the rest of the faculty, have been chosen from all over the South, renders the number especially readable. All in all, it is a most creditable offering from Southern pediatricists to the whole profession.

Mental and Nervous

James K. Hall, M. D., Dept. Editor

Instinct.

Spring has come and with it myriad manifestations of instinctive reaction to environment. The grass is springing up; the trees of the forest are bursting into buds; the trees of the orchard are blossoming in their proper season; the birds are mating, male with female, and each after its kind—there is no mixing of varieties; migrational changes in the feathered creatures are taking place; many seeds—the potato, for example—begin to sprout and to give the start to a plant even if left untouched in the cellar. These phenomena are so common as to provoke little comment.

Only the type of mind besotted in speculative philosophy and learning would presume to attempt to make the natural supernatural. It is natural for things to behave just as they do, and not in some other fashion. But instinct, nevertheless is not well-understood. It submits itself unsatisfactorily to analysis.

The bird hatched only last spring, without experience, instruction, or observation in nest building, is now busy in selecting material with which to fashion a nest. And its nest will duplicate in every detail the nests of its own kind for ages back. Instinct is, indeed, the most wonderful phenomenon in the universe. It is the endowment of the living thing with innate reaction—tendencies to environment that will tend to support and perpetuate the species. The day-old chick turns to one receptacle for water and to another for food, although it has never before seen

either water or food. The new-born mammal, whether of man or beast, turns unerringly to the breast for nourishment, and immediately institutes the complicated action of sucking.

James, the psychologist, defined instinct as the faculty of acting in such a way as to produce certain ends, without foresight of the ends, and without previous education in the performance. He thinks of instinctive action as a correlative of structure and as belonging in the domain of reflex action. The cat chases the mouse; the young duckling makes for the pond; the squirrel during the fall season hides away hickory nuts—but none of these acts have in view any definite end. They are reflex in type; mechanical rather than mental. There is a large element of I-can't-help-it in each act. The hen sets on the nest full of eggs not for the purpose of hatching a brood of chicks, but simply because the sight of the eggs excites that particular kind of reflex behavior. The actor in the drama is without knowledge of the final result of the act.

The she-bear, when her cubs are attacked, in endangering her life by rushing to their protection, cannot have in contemplation any such abstraction as mother-love. Her behavior is so because it cannot be otherwise, and be hers. It is a mistake to think of an instinct as a conscious virtue. It is no more so than the sudden escape of the body by reflex action from the point of a pin.

Man indulges in the delusion that his behavior is intellectual rather than instinctive. As a matter of fact, it would not be difficult to demonstrate that of all animals man's behavior is most instinctive, at least in origin. But man is endowed with memory, reasoning power, reflection, the faculty of anticipation, and for these reasons an act committed under the influence of instinct is remembered, and when the instinctive urge rises again the former instinctive act can be either suppressed or modified. All habits arise in some such fashion. The individual develops habits either by yielding to or by resisting instinctive behavior. The child is instinctively imitative, but is not dis-

criminating. Parents and teachers encourage the child to imitate good behavior and to resist bad example.

Man instinctively learns little, if anything, after the twenty-fifth or thirtieth year of his life. His mental interests become narrowed down to his daily business routine. The average man in mid-life and in old-age is parasitic. He lives on his past, obtains sustenance out of his yesterdays, his mental growth stops, his conservatism keeps the enthusiasm of the young people from running away with the world. But the young man, given over to the making of money, who cherishes the hope of retiring from business at sixty, surrounding himself with books, and making of himself a scholar, would do well to bear in mind that disappointment looms before him. Carnegie, hard as the steel he made, amassed great wealth, but his exploits in the literary world would have been laughable if they had not been so pathetic.

Many instincts are short-lived. They develop, abide a brief period, make their impress, and are gone forever. Teachers would do well to bear in mind the transitoriness of instinct. The great principle in pedagogy is to hammer the iron while hot. Dancing, drawing, interest in games, the acquisition of a foreign language without accent, the inculcation of religious beliefs, attention to dress, general deportment, knowledge about domestic animals, fowls, birds and flowers—there is instinctive interest in each of these things in early life, which, if attended to, would enormously influence the character and the subsequent life of the individual. For these reasons, knowledge and experience should be acquired in their proper season when instinct is hungry for them. It is difficult to acquire knowledge after the instinct for its acquisition has faded. Adults never learn to dance well, and social graces are poorly and incompletely acquired after childhood has passed. But one reverts easily—cheerfully, too?—to the experiences of childhood. Jiggs in his home of wealth and luxury yearns always for the plain diet and the crude companionship of his hod-carrying days,

Man is fundamentally an animal. It is a matter of the utmost consequence that his instincts be paid attention to in early life. His future depends upon what is done to them or with them. Some of them need inhibiting; others need cultivating.

The more the doctor can know about lower animals the more he will know about primitive man; the more he knows about primitive man the more he will know about his fellow-man and about himself.

Legislation that runs contrary to innate human tendencies is difficult to enforce.

Man has fought his way upward, out of the slime, against the elements, wild beasts, and against his fellowman—the fiercest of all foes. Life with mankind means a fight—a constant struggle. Armament conferences might be more successful if made up of representatives competent to give consideration to innate human tendencies. Before wars can cease man must be offered a satisfying substitute for his tendency to fight his own kind.

Dementia Praecox.

Tuberculosis was thought of formerly as the great ravager of the modern human family. But now that disease has been brought somewhat under control. It is no longer the chief cause of either death or disability. Malignant disease has not been checked. It kills by the thousands. It remains one of the great causes of ill-health and of suffering. But the cancer problem is being energetically attacked by powerful forces. There is hope that progress may be made against the malady.

The great, continuing problem to which society must pay constant attention is that caused by mental abnormality of one kind or another. In the institutions for mental disease in the United States there must be about 250,000 patients. If it costs \$200.00 a year to maintain a patient in such an institution one can easily understand the enormous outlay necessary to care for such an army of sick folks. The total actual cost upon state and national treasuries cannot be less than fifty-mil-

lions of dollars for each year. The majority of this vast sum is spent in caring for those irremediably insane—those in terminal dementia and those who have dementia praecox. This latter condition, though one of the most prevalent types of mental disorder, is poorly understood. Little is known of its cause and the diagnosis of the condition in the early stages is not at all easy. It is well-known, however, that the condition is chronic, that the constant tendency is in the direction of deterioration, and that few patients who develop dementia praecox are able to live outside of institutions. The malady generally robs them of their minds and consequently of ability to care for themselves. Because the mental loss does not carry with it loss of life, or the lessening of the number of their days, these patients gradually accumulate on the back wards of state hospitals where they become long-drawn-out state cares.

In the State of Virginia, for instance, there are almost 6,000 patients in institutions maintained by the State for the care of the mentally abnormal. Of this number it is safe to assume that at least thirty per cent., or 1,800, are cases of dementia praecox. If the State is able to care for these patients for \$200.00 per year apiece the enormous sum of \$360,000 is spent by Virginia each year as a result of the prevalence of dementia praecox amongst her people.

Practically nothing comes back in the way of return for the money expended. There is no known medical or surgical treatment of the condition. It blights but it does not kill. It causes loss of mind but not loss of life. It unfits for home and society and makes necessary existence in an institution.

It would seem that in the presence of this continuing scourge which lays year after year such a heavy tax upon the treasuries that the states would make persistent effort to find out what dementia praecox is. There has been no unified investigation of the disorder. It remains the greatest scourge in the realm of disease.

Drug Intoxication.

One may wonder if the teachers of materia medica and therapeutics know all that is to be known about the chronic toxic effects of the so-called coal tar derivatives. Veronal, trional, sulphonal and especially acetanilid are habit-forming drugs. Not many lay people seem to know that to be true, and it is to be feared that a good many physicians may not know how easily an individual can fall into the habit of taking one of these so-called harmless drugs.

There is, indeed, no such thing as a harmless drug. If beneficent if used in right way, even a harmless drug is harmful if used in the wrong way.

A man of fifty-odd gradually became doubtful of the fidelity of his good wife, his memory became defective, various manifestations of mental disorder developed from day to day, and the speech became somewhat affected. There was no cyanosis. His mental condition slowly returned to normal. It was discovered that he had been taking an acetanilid-containing powder two or three times a day for a good many years. He evidently had a toxic psychosis caused by the long-continued use of acetanilid.

Trional and veronal intoxications in chronic form are seen not infrequently. Both the body and the mind are affected. The muscular incoordination is suggestive of alcoholic intoxication. There is mental confusion, dulness, disturbance of memory, and often well-defined delusions.

One of the most insane individuals I have ever seen was a man who, in an effort to stop taking morphine, had taken about twelve hundred grains of sodium bromide at once. After profound unconsciousness lasting for a few days he became almost maniacal and he remained so for several weeks, but he finally got well.

I have heard authentically of a man who had the habit of eating salts—magnesium sulphate—daily. One or two pounds eaten during the day had a sedative effect upon him.

An outstanding feature of the mental abnormality resulting from the long-

continued use of coal tar drugs is that the individual is blind—totally so, in my observation—to the fact, so apparent to every one else, that he is mentally disordered at all.

Physicians would do well to bear in mind the readiness with which many people contract the habit of taking regularly many of the so-called harmless, pain-relieving and sleep-inducing drugs, many of which bear a proprietary label.

Röntgenology

Robt. H. Lafferty, M.D., Dept. Editor.

It has been our privilege to hear many papers on cancer and radiation treatment of cancer during the last few years. The Symposium at Rochester, Minn., last December on Carcinoma of the Breast was about the best that we have heard. These papers and the discussions are published in Radiology for March 1924. They are well worth a careful study by both surgeon and radiologist. The symposium was opened by Drs. Lee and Hereden of the Memorial Hospital, New York. They base their opinions and study upon 54 cases of Primary Inoperable Carcinoma cases from the Breast clinic of this institution. The first paragraph of this excellent paper is as follows:

Within the past decade, radiotherapy has become definitely established as one of the useful methods in the treatment of mammary cancer. Moreover, in the primary inoperable cases, it is now regarded by the profession generally as the method of choice. Surgeons and radiologists are demanding trustworthy data upon the results of treatment of this disease. It is deplorable that premature reports are made, a few months after treatment, of brilliant results of radiotherapy in the field of mammary cancer. Such publications are misleading and tend to throw the science of radiology into disrepute. The present paper is a report of the course and result of the treatment of 54 cases of primary inoperable carcinomata of the breast, admitted to the Breast Clinic at the Memorial Hospital prior to Jan. 1,

1921, all patients having begun their treatment 3 years or more ago.

They then state the factors leading to a decision of inoperability under ten heads, which might be briefly summarized as fixation either of the tumor or of the glands in the axilla, involvement of the supraclavicular area, involvement of the axilla on opposite side, involvement of opposite breast and metastasis. 61.2 per cent of the primary carcinoma of the breast entering this institution were inoperable. They advise against biopsy or frequent palpation. Finney is quoted as stating that in untreated cases the average length of life from the time the tumor is first seen is 20 to 28 months. In the 54 cases here reported the average length of life was four years and the suffering in most of them was greatly lessened. Ten of the cases are still living and none of them have developed bone metastasis. Three had chest metastasis on admission and three developed it later and four cases have no clinical evidence of the disease after three to four years. Among the conclusions the following are especially noted:

The inoperable carcinoma comprise approximately two-thirds of the primary carcinoma of the breast.

Radiation of metastasis of the bones usually gives marked relief from the pain.

Treatment by radiation lengthens life and gives relief from pain.

Bowing of Rochester reports in detail four cases of preoperative radiation showing slides of the tumors. He feels that he has too little data to draw definite conclusions.

Jenkinson of Chicago in his paper is very conservative and pleads for cooperation between surgeon and the radiologist. He urges a pre-operative treatment a week or two before operation and reports splendid and encouraging results. He gives the following conclusions:

1. Cooperation of the surgeon and radiologist is imperative in the successful treatment of breast carcinoma.

2. Pre-operative radiation should be a routine procedure in every case.

3. In post-operative radiation, treat the individual case. Fixed factors are to be discouraged. Formulate a technic conforming to the case at hand. In other words, adapt the technic to the patient and not the patient to the technic.

4. All patients showing spinal metastasis with or without paralysis should be given the benefit of a thorough series of radiation.

Dr. Stevens of Montclair, N. J., followed with a paper of very interesting and encouraging statistics. We quote only one paragraph of his conclusions as follows:

"While the results obtained by post-operative radiation are a great improvement over those over surgery alone more can probably be expected by both pre—and post-operative radiation. It has been proven that a properly radiated cancer cell will not grow if transplanted. Some surgeons are making use of this by prescribing pre-operative radiation."

Among those discussing these papers bare mention of the names of the men will insure attention and assure us of something well worth while. Drs. Erskine, Soiland, and Hirsch were among the radiologists discussing this. Drs. Bloodgood, Sistrunk and McCardy being surgeons and pathologists that contributed to the discussion.

In conjunction with this symposium there is a very able paper presented by Dr. Schmitz of Chicago on "The Clinical symptoms and treatment of radiation sickness," a subject that has proven very fruitful of discussion for many years. The following conclusions may be of interest:

1. The chemical analysis of the blood and the clinical observations of patients treated with radiation permit the statement that the proteins liberated by the action of rays cause an acute constitutional intoxication. This is severest in patients in whom autolytic processes from extensive and necrotic cancers are already existing. The trauma from the rays in the tissues and organs within the radiation field results in an inflammation.

2. Radiation sickness should be di-

vided into primary and secondary forms. The primary form is the acute constitutional intoxication and appears soon after the treatment. The secondary form consists of the trauma caused by the rays in the tissues lying within the radiation field and is an inflammation. It occurs within fourteen to twenty-one days after the radiation.

3. The clinical picture and the prophylactic and curative treatment of the radiation intoxication and inflammation have been discussed. The method of application of the treatment should be based on the clinical findings. Reapplications of modern massive short wave length radiation should not be made, as thus permanent injuries in the form of indications and ulcer are caused.

Hospital and Sanatorium

John Q. Myers, M. D., Dept. Editor

The Hospital a Workshop.

The hospital no longer stands in disrepute as a place to go as a last resort which generally ended in death. The hospital is being recognized as a workshop where there are facilities that represent the last word in scientific medicine and workers who represent the best in training and skill that modern medicine affords. The public is coming to realize that a hospital is a community problem, that it shall have community support and shall serve everyone—the poor, the rich and the great middle class on whom a great hardship has come by reason of the tremendous cost of medicine if it is not afforded them by an institution at a cost which shall not make it prohibitive. The public is coming to realize that hospital practice by the medical profession shall not be abused, that the hospital shall not exist for a few select physicians of a community, but shall be accessible to all well-trained medical men.

It is obviously unfair to the young man who has thoroughly trained himself in modern medicine and satisfactorily met all the prescribed standards of qualification to be turned loose in a

community and try to practice that type of medicine which he has been trained to practice without hospital facilities. It must ever be true that a certain per cent of illnesses do not require hospital care; this is especially true of the acute illnesses where the diagnosis is obvious and definite and where the course of the disease is likewise definite. Under such circumstances, good care can well be improvised at home and the well-trained physician who does home work suffers no handicap other than that of time in carrying into the home that necessary medical attention.

We had it well demonstrated in the army service in large numbers that a large per cent of acute illnesses require no particular medical attention other than good care, encouragement of elimination and a proper diet. Nature is a good doctor and has more specifics for the cure of disease than is generally credited.

We must come to look on a hospital as a complete workshop, that is, not a place to hospitalize bedridden patients alone for diagnosis and treatment, but as a workshop for diagnoses and advice as to treatment in the ambulatory case, such as is being done in our free clinics and part-pay clinics. The same principle in diagnosis must be applied to all material. It is a well recognized fact that present day medicine is organized to care for the destitute and the very well-to-do, but the great middle-class is unable to buy modern medicine. Fortunately, the numbers whose conditions demand this type of medicine are in the minority so that society suffers only in a limited way.

Clinical and Professional Notes

J. Allison Hodges, M. D., Dept. Editor

Health Education and Medical Progress.

If the ideals of Medicine, and the standards of Medical Education are to be upheld, the public must be educated. The Medical Society of Virginia at its last meeting, believing that this was necessary, organized the Virginia

League for Health Education and Medical Progress. The plan is the mutual cooperation of Laymen with Physicians and allied professions; its object is two-fold, to aid and encourage the promotion of personal and public Health Education, and to teach the value and achievements of Scientific Medicine. In other words, the people, for whose protection the medical profession has always worked, will be given a dignified statement of the aims and results of regular medicine, and they will be called upon to fight this battle of altruism. Physicians are asking only for certain necessary and basic educational requirements for the practice of medicine, and possessing which, a man could practice, as he worships God, "according to the dictates of his own conscience."

It is the public that should be protected, and it should do its part in this important work.

The progress of medical science is dependent largely upon the efforts of the medical profession, which must not only initiate and test the advances in modern science, but must instruct the public as to the necessity and advantage of these, relative to personal and public health.

It is believed by many, that physicians, as a rule, are more interested in their practice than in their profession, and that the physicians do not, in many matters in which they seek the aid of the people, take the public sufficiently into their confidence, and consequently, the people at large are not materially interested in these matters, because they are not informed, or falsely informed, and as a result, do not cooperate in progressive methods intended for their relief.

The profession needs this assistance, and to this end, the Virginia League of Health Education and Medical Progress was organized at the last meeting of the Medical Society of the State of Virginia in Roanoke. The League's officers and membership will consist of physicians, the allied professions, laymen, nurses, and members of the Woman's Auxiliary of the Medical Society of Va., all being representatives of the different sections of the state, who will form lo-

cal groups or units that will cooperate with the Executive Staff of the League, and thus assist in the work of Health Education and Medical Progress, all to be under the direction and auspices of the State Medical Society, and all to coordinate their work with existing accredited boards and committees.

This plan of organization, seeking for the first time the direct cooperation of the laity with the profession, received the unanimous endorsement of the Executive Council, the House of Delegates and of the Society, and appeals to the physicians, especially, to aid in carrying out its purposes along the lines indicated.

The necessity for some such organization has been notably apparent recently, for the ignorance of many citizens in regard to essential matters pertaining to personal and public health, as well as to the progress of scientific medicine, is almost unbelievable, and has been unfortunately illustrated in many sections of the state by lack of education regarding the use and value, for instance, of the Schick Test, Toxin-Antitoxin for the prevention of Diphtheria, the importance of Malnutrition, etc., and in the recent General Assembly, relative to the tenets and claims of certain sectarian cults in the practice of the Art of Healing.

The purposes, in brief, of the League which will be advocated, both locally and otherwise, will be, among other things, the following:

1. Personal and Public Health Instruction;
2. Periodic Health Examinations;
3. Pre-Natal Care and Child Welfare;
4. Conservation of the Health and Sight of Infants and children of the pre-school age;
5. Necessity of "taking stock," mentally and physically, of school children;
6. Information relative to Cancer, Tuberculosis and Prevention of Heart Disease, etc.;
7. County Sanitation and Institutional Reforms;
8. Information regarding Medical Progress;

9. Information to laymen and profession as to the various dogmas of sectarian cults;

10. Instruction of the laity as to some of the community medical problems and diseases, and their prevention, and

11. When deemed feasible and advisable by the Executive Staff Officers, a State Health Exposition shall be held in some city in the state. Treatment of disease is not the only important function or duty of the doctor's life; the public should have certain basal information regarding Health and the Progress of Medicine, not the schisms of the profession, nor the merits of certain methods, but sufficient knowledge regarding disease of the entire human system, to safeguard itself, and to protect life against any practitioner who does not show, and prove by examination some conception of what constitutes disease.

This is a task which will not be easy of realization, and will be slow in its accomplishment, but it is one that should appeal to every physician who truly loves his profession and realizes his obligations.

Dr. J. Allison Hodges is President, Mr. G. H. Winfrey is Executive Secretary, and Miss Agnes V. Edwards, is Treasurer of the Virginia League.

News Items

Rutherfordton County N. C. Medical Society, Jan. 17th, 1924, elected the following Officers for the year 1924:

President—Dr. T. C. Lovelace, Henrietta, N. C.

Secretary-Treasurer—Dr. W. C. Bostic, Forest City, N. C.

Delegates—Dr. Henry Norris, Rutherfordton, N. C.; Dr. C. F. Gold, Ellenboro, N. C.

Alternates—Dr. F. W. H. Logan, Rutherfordton, N. C.; Dr. T. C. Lovelace, Henrietta, N. C.

On April 1st **Dr. J. Fulmer Bright** was nominated in the Democratic primary for Mayor of the City of Richmond, Virginia. The nomination is equivalent to election.

Dr. H. B. Melvin, born in 1840, a graduate of the Medical College of Virginia in the class of 1862, died suddenly of the infirmities of age at his home in Halifax, Virginia, on March 16th. He was a soldier of the Confederacy, a man of commanding personality, and for more than a generation he had given himself without stint to his community. He had never married.

Dr. Eugene B. Glenn, born in 1871, a graduate of the Jefferson Medical College in the class of 1896, died at his home in Asheville, North Carolina, on March 30th. For many years Dr. Glenn had been an outstanding figure in the medical profession of his state, and he had enjoyed a large practice in his city.

Dr. Wm. P. Cornell, born in 1878, a graduate of the Medical College of the State of South Carolina in the class of 1898, died suddenly at his home in Columbia on February 24th. He was one of the leading pediatricians of the state.

Plaut Research Fund.

Dr. Edward Plaut, president of Lehn & Fink, Inc., New York, has presented the Harriman Research Laboratory with the sum of \$3,000 for the year 1924, to be known as the "Plaut Research Fund for Studies in Internal Medicine." This fund is to aid in the investigation of the effects of certain therapeutic agents, especially the endocrine glands. Dr. K. G. Falk has been placed in charge of this work by Dr. W. G. Lyle, director of the Harriman Research Laboratory.

Dr. James J. Phillips, of Raleigh, North Carolina, died suddenly of angina pectoris at his home on April 2. He was a well-known pediatrician, a graduate of the U. of N. C., class 1890, and of the College of Physicians and Surgeons, New York City. After practicing in New York for about ten years he

moved to Tarboro and later in 1919 to Raleigh.

Dr. R. D. Patterson, of Liberty, North Carolina, was instantly killed in an automobile accident near his home on April 3. He was a graduate of the Baltimore Medical College in the class of 1897, but he had retired from active practice.

Fire of unknown origin on the morning of April 3 partially destroyed **Broad Oaks Sanatorium**, a private institution at Morganton, North Carolina, for mental and nervous diseases. Three patients lost their lives in the fire and others were more or less seriously injured.

Dr. Valeria Parker, director of the Department of Social Measures of the American Hygiene Association has just given a series of talks to high school students and parents of Raleigh, N. C. These were heart to heart talks, educative in character and a plea for higher ideals and purer homes for the coming generation.

Dr. William F. Malone, Milwaukee, died at the Hanover hospital, March 26 while performing a major operation. When he dropped over dead, attendants cared for him while his assistant successfully completed the operation.

Dr. William P. Cornell, Columbia, S. C., died suddenly February 25 of angina pectoris. Dr. Cornell was among the best known and most loved members of the Tri-State Association. He graduated from the S. C. Medical College in 1898 and for fifteen years was professor of Pediatrics at that school. He was a member of the State Board of Health and Associate Editor of the S. C. Medical Journal.

Durham County, N. C., has appropriated \$600.00 for the purpose of conducting classes to determine the beneficial effects of proper nutrition on the actual school work of the children.

Dr. T. R. McCracken, Guilford College, N. C., died April 1, 1924.

Chiropractors fail in Virginia to obtain recognition. Two bills were pre-

sented to the last session of the legislature, one calling for an independent board and the other calling for representation on the special board. Both bills were killed in committees.

Publications Received

Applied Pathology in Diseases of the Nose, Throat and Ear. By Joseph C. Beck, M.D., F.A.C.S. Professor of Laryngology, Rhinology and Otolaryngology, University of Illinois College of Medicine. 280 pages with 268 illustrations. Price \$7.50. C. V. Mosby Company, St. Louis.

The author does not desire that this be considered as a text book but rather as a presentation of personal experience. By applying the pathological entities to etiology, symptoms, diagnosis and prognosis the author arrives at a rational basis for treatment, and no treatment can be rational without first analyzing the pathological change present. The illustrations are clear and are used freely to bring out obscure points in question.

The Antidiabetic Functions of the Pancreas and the Successful Isolation of the Antidiabetic Hormone—Insulin. By Professor J. J. R. Macleod and Professor F. G. Banting. Published by The C. V. Mosby Co., 508 N. Grand Boulevard, St. Louis. Price, \$1.50.

The authors have recorded the historical events in the development of knowledge of the Pancreas, also the function of this organ relating to carbohydrate digestion and Metabolism and have told the story of the discovery and isolation of insulin and its employment in the treatment of diabetes mellitus in a most interesting way.

Methods in Medicine. The Manual of the Medical Service of George Dock, M.D., Sc.D., formerly Professor of Medicine, Washington University School of Medicine. By George R. Herrmann, M.D., Ph.D., Instructor in Medicine, University of Michigan. 552 pages, illustrated. Price, \$6.50. The C. V. Mosby Co., St. Louis.

This Manual is intended to be a practical bedside guide to the complete systematic diagnostic study of the condition, and gives an outline of what the author considers the minimum requirements for reaching a dependable diagnosis. Material collected from various sources has been logically arranged and condensed. There are five sub-divisions; Part I taking up administrative methods, rules and detailed regulations, with suggestions for history taking, physical examination, laboratory work and the routine requirements for each type of case. Part II, special methods of

clinical and laboratory investigation. Part III, acceptable therapeutic methods with emergency measures. Part IV, dietetic measures and diet lists. Part V, illustrates recording and graphic methods in the form of a complete history with representative charts of data from the usual types of cases.

Operative Surgery. (Volume 3.) Covering the Operative Technic involved in the operations of general and special surgery. By Warren Stone Bickman, M.D., F.A.C.S. Former Surgeon in charge of General Surgery, Manhattan State Hospital, New York, Former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In six octavo volumes totaling approximately 5400 pages with 6378 illustrations, mostly original and separate Desk Index Volume. Volume 3 containing 1001 pages with 1249 illustrations. Philadelphia and London. W. B. Saunders Company, 1924. Cloth, \$10.00 per volume. Sold by subscription only. Index Volume Free.

This volume takes up the operations of the eyes, ears, nose, sinuses, cheeks, lips, teeth, hard and soft palate, tongue, pharynx, salivary glands and ducts, larynx trachea, esophagus, thyroid and thymus glands, other operations on the neck, thorax and pleural cavity. The book is well written, thoroughly illustrated and authoritative.

The Biology of the Internal Secretions. By Francis X. Dercum, M.D. Ph.D., Professor of Nervous and Mental Diseases in the Jefferson Medical College. W. B. Saunders Co., Philadelphia.

The author in this essay approaches the problem of the internal secretions from a general biological point of view. Since the phenomena presented by the internal secretions are in their ultimate analysis problems of metabolism it is logical that the author considers the elemental facts of metabolism in the various forms of life. Doing this naturally leads to a discussion of abnormalities and their relation to the development of the embryonic layers. A biological consideration of the internal secretions and the role which they play in the metabolism of the organ as a whole, leads to certain conclusions regarding heredity; more especially as to the inheritance of acquired characters.

Obstetrics for Nurses. By Joseph B. De Lee, A.M., M.D., Professor of Obstetrics at North Western University Medical School. Seventh Edition. W. B. Saunders Co., Philadelphia.

Dr. De Lee's text book on Obstetrics for Nurses has become so well known and so universally used in training schools that little need be said except that this new Seventh Edition just off the press has been entirely reset and materially expanded. Among other things twenty-four pages have been added discussing Pre-Natal Care. Throughout the subject the book has been revised to meet the increasing demands of Nurses' Examining Boards and yet kept within the limits of propriety—for a text on Obstetric Nursing.

International Clinics. Vol. 1. Thirty-fourth Series. J. B. Lippincott Co., Philadelphia.

This volume contains clinical lectures on Exophthalmic Goitre by Barker, Heart Disease in Children by Crozer Griffith, and on Essential Hemorrhagic Purpura by Brill. A symposium on the New-Born with five contributors,—six lectures on Diagnosis and Treatment, two on Rectal Diseases, Industrial Medicine, etc. Following the well established plans this volume maintains the high standards of excellence of International Clinics.

The Surgical Clinics of North America. Kansas City Number. W. B. Saunders Co., Philadelphia.

Containing sixteen surgical clinics by Kansas City surgeons.

The Rockefeller Foundation. Annual Report.

Scientific Rejuvenation Without Operation. By Herman H. Rubin, M.D., based on the Radiation Technique of Dr. Eugene Steinbach of Vienna.

Dr. Rubin is Director of the American Institute of Radiodocrinology and discusses a subject dear to the heart of every human being.

A Physician's Manual of Vaccine Therapy. By G. H. Sherman, M.D.

An attractive volume giving concise, comprehensive and practical data on the application of Bacterial Vaccine Therapy in the prophylaxis and treatment of infectious diseases.

PROGRAM SEVENTY-FIRST ANNUAL SESSION of the MEDICAL SOCIETY of the State of NORTH CAROLINA

April 15-17

1924

Raleigh, N. C.

OFFICERS 1923-1924.

President—Dr. J. Vance McGougan, Fayetteville.

First Vice-President—Dr. J. L. Spruill, Jamestown.

Second Vice-President—Dr. Eugene B. Glenn, Asheville (deceased).

Third Vice-President—Dr. D. A. Garrison, Gastonia.

Secretary-Treasurer—Dr. L. B. McBrayer, Sanatorium.

COUNCILORS 1922-1925.

First District—Dr. H. D. Walker, Elizabeth City.

Second District—Dr. J. C. Rodman, Washington.

Third District—Dr. E. S. Bulluck, Wilmington.

Fourth District—Dr. K. C. Moore, Wilson.

Fifth District—Dr. A. McN. Blair, Southern Pines.

Sixth District—Dr. J. M. Templeton, Cary.

Seventh District—Dr. B. J. Witherspoon, Charlotte.

Eighth District—Dr. W. F. Cole, Greensboro.

Ninth District—Dr. C. M. Van Poole, Salisbury.

Tenth District—Dr. E. B. Glenn, Asheville (deceased).

CHAIRMAN OF SECTION 1924

Public Health and Education—Dr. R. S. McGeachy, Kinston.

Surgery—Dr. B. J. Lawrence, Raleigh.

Eye, Ear, Nose and Throat—Dr. John W. McConnell, Davidson; Dr. H. L. Sloan, Charlotte, Secretary.

Gynecology and Obstetrics—Dr. F. Webb Griffith, Asheville.

Pediatrics—Dr. B. U. Brooks, Durham.

Practice of Medicine—Dr. D. Heath Nisbet, Charlotte.

Chemistry, Materia Medica and Therapeutics—Dr. W. T. Rainey, Fayetteville.

N. C. Section of Medical Veterans and Medical Officers Reserve Corps, U. S. A. Dr. Chas. O'H. Laughinghouse, Greenville.

COMMITTEE ON SCIENTIFIC WORK.

Dr. E. J. Wood, Chairman, Wilmington; Dr. Wm. deB. MacNider, Chapel Hill; Dr. C. A. Shore, Raleigh.

COMMITTEE ON PUBLICATION.

Dr. L. B. McBrayer, Chairman, Sanatorium; Dr. M. L. Townsend, Charlotte; Dr. Harry L. Brockman, High Point.

COMMITTEE ON OBITUARIES.

Dr. A. W. Knox, Chairman, Raleigh; Dr. C. F. Strosnider, Goldsboro; Dr. F. L. Siler, Franklin.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

Dr. K. P. B. Bonner, Chairman Raleigh; Dr. W. A. Monroe, Sanford; Dr. A. A. Kent, Lenoir.

COMMITTEE ON FINANCE.

Dr. Foy Roberson, Chairman, Durham; Dr. W. F. Hargrove, Kinston; Dr. J. C. Hall, Albemarle.

COMMITTEE ON PUBLIC HEALTH ADMINISTRATION.

President State Board of Health, ex-officio, Dr. J. Howell Way, Waynesville; President Board of Medical Examiners, ex-officio, Dr. L. N. Glenn, Gastonia; President North Carolina Hospital Association, ex-officio, Dr. L. A. Crowell, Lincolnton.

COMMITTEE ON MEMORIAL FOR THE NORTH CAROLINA PHYSICIANS WHO DIED IN THE LATE WAR.

Dr. J. P. Munroe, Chairman, Charlotte; Dr. A. J. Crowell, Charlotte; Dr. L. B. McBrayer, Sanatorium; Dr. J. M. Parrott, Kinston; Dr. J. T. Burrus, High Point.

COMMITTEE TO CONSIDER FOUR YEAR MEDICAL SCHOOL TO BE ESTABLISHED BY THE STATE UNIVERSITY.

Chairman, Dr. I. W. Faison, Charlotte; Dr. A. J. Crowell, Charlotte; Dr. J. T. J. Battle, Greensboro; Dr. J. H. Shuford, Hickory; Dr. C. M. Van Poole, Salisbury; Dr. E. T. Dickinson, Wilson; Dr. L. B. McBrayer, Sanatorium; Dr. W. L. Dunn, Asheville; Dr. H. H. Briggs, Asheville; Dr. David T. Tayloe, Washington; Dr. J. F. Highsmith, Fayetteville; Dr. J. V. McGougan, Fayetteville; Dr. Foy Roberson, Durham; Dr. F. M. Hanes, Winston-Salem; Dr. W. P. Holt, Duke; Dr. J. Howell Way, Waynesville; Dr. E. J. Wood, Wilmington; Dr. E. M. McIver, Jonesboro; Dr. Cyrus Thompson, Jacksonville; Dr. W. F. Hargrove, Kinston; Dr. J. M. Parrott, Kinston; Dr. C. O'H. Laughinghouse, Greenville; Dr. Ivan P. Battle, Rocky Mount; Dr. T. E. Anderson, Statesville; Dr. A. C. Everett, Rockingham; Dr. Peter John Laurinburg; Dr. W. H. Cobb, Goldsboro; Dr. R. H. Lewis, Dr. W. S. Rankin, Dr. Hubert A. Rovster, Raleigh.

COMMITTEE ON X-RAY THERAPY IN EYE, EAR, NOSE AND THROAT WORK (Appointed by Section on Eye, Ear, Nose and Throat.)

Chairman, Dr. J. W. MacConnell, Davidson; Dr. John B. Wright, Raleigh; Dr. O. C. Daniels, Goldsboro; Dr. Louis N. West, Raleigh; Dr. W. C. Horton, Raleigh.

COMMITTEE ON CLINICS. (Appointed by Section on Eye, Ear, Nose and Throat.)

Chairman, Dr. J. W. MacConnell, Davidson; Dr. V. M. Hicks, Raleigh; Dr. John B. Wright,

Raleigh; Dr. J. Gerald Murphy, Wilmington; Dr. H. H. Briggs, Asheville.

COMMITTEE ON AUTOMOBILE INSURANCE.

Chairman, Dr. J. T. Burrus, High Point; Dr. F. M. Hanes, Winston-Salem; Dr. R. Duval Jones, New Bern.

COMMITTEE ON ARRANGEMENTS.

Chairman, Dr. Albert Anderson, Raleigh.

DELEGATES TO AMERICAN MEDICAL ASSOCIATION.

Dr. M. L. Stevens (1923), Asheville; Dr. H. A. Rovster (1923-1924), Raleigh.

DELEGATES TO MEDICAL SOCIETY OF VIRGINIA.

Dr. C. T. Smith, Rocky Mount; Dr. C. S. Lawrence, Winston-Salem; Dr. Claude B. Williams, Elizabeth City; Dr. Paul H. Ringer, Asheville; Dr. C. F. West, Kinston.

DELEGATES TO SOUTH CAROLINA MEDICAL ASSOCIATION.

Dr. Albert W. James, Hamlet; Dr. W. R. Kirk, Hendersonville; Dr. James A. Martin, Lumberton; Dr. Albert S. Root, Raleigh; Dr. Henry L. Sloan, Charlotte.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

Surgery—Dr. L. N. Glenn, President, Gastonia. Obstetrics, Gynecology and Pediatrics—Dr. K. P. B. Bonner, Secretary-Treasurer, Raleigh.

Materia Medica, Therapeutics and Pharmacology—Dr. J. G. Murphy, Wilmington. Practice of Medicine—Dr. W. P. Holt, Duke. Anatomy and Embryology—Dr. L. A. Crowell, Lincolnton.

Chemistry, Hygiene and Physiology—Dr. W. M. Jones, Greensboro.

Bacteriology, Histology and Pathology—Dr. C. A. Shore, Raleigh.

BOARD OF EXAMINERS OF TRAINED NURSES OF NORTH CAROLINA.

President, Miss Mary Laxton, Biltmore; Secretary-Treasurer, Mrs. Z. V. Conyers, Greensboro; Miss E. A. Kelly, Fayetteville; Dr. Oren Moore, Charlotte; Dr. J. M. Parrott, Kinston.

ENTERTAINMENTS AND CLINICS

The Wake County Medical Society has arranged the following entertainments and clinics in honor of the members and the guests in attendance on the meeting of the Medical Society of the State of North Carolina:

Tuesday, 5:30 P. M.

Reception to the Medical Society and allied organizations, and visitors and guests in attendance, given by Dr. and Mrs. Hubert A. Rovster at their home, "Woodland", in Bloomsbury.

Wednesday, 4:00 to 5:00 P. M.

Automobile drive for the visiting ladies.

Wednesday, 5:00 P. M.

Tea at Woman's Club for the visiting ladies.

Wednesday, 9:00 P. M.

Annual dance, Hotel Sir Walter. Patronesses: Members of the Woman's Auxiliary.

Tuesday, Wednesday and Thursday

Mornings—8:00 to 9:00.

Clinic on Mental Diseases at the State Hospital, Dr. Albert Anderson, Superintendent.

Wednesday, 3:00 to 5:00 P. M.

Eye, Ear, Nose and Throat Clinic at the Rex Hospital by the Raleigh specialists in these lines.

OUR DEAD DURING THE YEAR.*

Attmore, George S., Stonewall
Asbury F. E., Asheville
Beers, Charles, Asheville
Calloway, A. W., Asheville
Faucette, T. S., Burlington
Fox, Thomas I., Franklinville
Glenn, Eugene B., Asheville
Graham, George W., Charlotte
Hargrove, Robert H., Robersonville
Herring, Needham B., Wilson†
Hicks, William N., Durham
Hill, M. B., Sparta†
Hilton, Julius J., Greensboro†
LeGwin, John B., Wilmington†
McCurry, William Carson, Murchison†
McIver, E. M., Jonesboro
Meadows, Elijah B., Oxford
Palmer, B. H., Shelby
Patterson, R. D., Liberty†
Phillips, J. J., Raleigh
Phipps, Albert A., Greensboro†
Pittman, Henry L., Durham
Reece, J. M., Elkin
Sterritt, James R., Durham
Stockard, J. K., Greensboro†
Williams, John A., Greensboro

18 members—8 physicians not members.

*List accurate as far as obtainable.

†Not members.

RESUME OF PROGRAM

Monday, April 14

9:30 A. M.—North Carolina Public Health Association.
North Carolina Hospital Association.
2:00 P. M.—North Carolina Hospital Association.
2:00 P. M.—North Carolina Public Health Association.
8:00 P. M.—North Carolina Public Health Association.
North Carolina Hospital Association.

N. C. State Section of the American College of Surgeons.

Tuesday, April 15

8:00-9:00 A. M.—Clinic on Mental Diseases, State Hospital.
9:00 A. M.—Opening Exercises.
10:30 A. M.—Section on Practice of Medicine.
N. C. Section of Medical Veterans, etc.
Section on Chemistry, Materia Medica and Therapeutics.
2:00 P. M.—Meeting of the House of Delegates.
2:00 P. M.—Section on Chemistry, Materia Medica and Therapeutics, continuing.
Section on Public Health and Education.
5:30 P. M.—Reception, Dr. and Mrs. Hubert A. Rovster.
8:00 P. M.—General Session, City Auditorium.

Wednesday, April 16

- 8:00- 9:00 A. M.—Clinic on Mental Diseases, State Hospital.
- 9:00 A. M.—Section on Eye, Ear, Nose and Throat.
Section on Pediatrics.
Section on Surgery.
- 10:00 A. M.—Woman's Auxiliary.
- 12:00 M. —Conjoint Session of the Medical Society of the State of North Carolina and the State Board of Health.
- 2:00 P. M.—Meeting of the House of Delegates.
- 2:00 P. M.—Symposium on Gastric and Duodenal Ulcer and Congenital Pyloric Stenosis.
Section on Gynecology and Obstetrics.
- 3:00- 5:00 P. M.—Eye, Ear, Nose and Throat Clinic, Rex Hospital.
- 4:00- 5:00 P. M.—Automobile Drive for Visiting Ladies.
- 5:00 P. M.—Tea at Woman's Club for Visiting Ladies.
- 8:00 P. M.—General Session.
- 9:00 P. M.—Annual Dance, Hotel Sir Walter.

Thursday, April 17

- 8:00- 9:00 A. M.—Clinic on Mental Diseases, State Hospital.
- 9:00 A. M.—Section on Surgery, continuing.
- 11:00 A. M.—General Session.

GENERAL SESSIONS**Tuesday, April 15, 9:00 A. M.****OPENING EXERCISES**

Call to Order—Dr. Albert Anderson, Chairman of the Committee on Arrangements, Raleigh.

Invocation—Rev. W. A. Stanbury, Pastor, Edenton Street Methodist Church, Raleigh.

Welcome from the Mayor—Hon. E. E. Culbreth, Raleigh.

Welcome from Wake County Medical Society—Dr. H. M. Bonner, President, Raleigh.

Welcome to the City of Raleigh—Hon. R. N. Simms, Raleigh.

Response: Dr. Seavy Highsmith, Fayetteville.

President's Address—Dr. J. V. McGougan, Fayetteville.

Announcements—Chairman of Committee on Arrangements. Secretary.

Tuesday, April 15, 2:00 P. M.

Meeting of the House of Delegates.

Wednesday, April 16, 2:00 P. M.

Meeting of the House of Delegates.

Tuesday, April 15, 8:00 P. M.

(City Auditorium)

Symposium—Medical Aspect of Mental Defectives, Dr. J. K. Hall, Richmond, Va.

Legal Aspect of Mental Defectives—Hon. J. C. B. Ehringhouse, Elizabeth City.

Address—Dr. Royal S. Copeland, United States Senator, New York.

Wednesday, April 16, 12:00 M.

Conjoint Session of the Medical Society of

the State of North Carolina and the North Carolina State Board of Health (Dr. J. H. Way, President of the State Board of Health, presiding.)

MEMBERS OF THE STATE BOARD OF HEALTH

President, Dr. J. Howell Way, Waynesville.

Dr. Richard H. Lewis, Raleigh.

Dr. Thomas E. Anderson, Statesville.

Dr. Chas. O'H. Laughinghouse, Greenville.

Dr. Cyrus Thompson, Jacksonville.

Dr. E. J. Tucker, Roxboro.

Dr. A. J. Crowell, Charlotte.

Dr. D. A. Stanton, High Point.

Mr. Jas. P. Stowe, Charlotte.

EXECUTIVE STAFF OF THE STATE BOARD OF HEALTH

Secretary and State Health Officer—Dr. W. S. Rankin, Raleigh.

Assistant Secretary—Dr. G. M. Cooper, Raleigh.

Deputy State Health Officer—Dr. E. F. Long, Raleigh.

Deputy State Health Officer—Dr. H. A. Taylor, Raleigh.

Director State Laboratory of Hygiene—Dr. C. A. Shore, Raleigh.

Chief Bureau of Engineering and Inspection—Mr. H. E. Miller, Raleigh.

Deputy State Registrar of Vital Statistics—Dr. F. M. Register, Raleigh.

Chief Bureau of Maternity and Infancy—Dr. K. P. B. Bonner, Raleigh.

ORDER OF BUSINESS

Report of work accomplished and recommendations.

Discussions.

New Business.

Adjournment.

Wednesday, April 16, 2:00 P. M.

Meeting of the House of Delegates.

Wednesday, April 16, 8:00 P. M.

1. Report of the Board of Medical Examiners—Dr. K. P. B. Bonner, Secretary-Treasurer, Raleigh.

2. Report of the Committee on Obituaries—Dr. A. W. Knox, Chairman, Raleigh; Dr. C. F. Strossner, Goldsboro; Dr. F. L. Siler, Franklin.

Thursday, April 17, 11:00 A. M.

Report of House of Delegates.

Installation of Officers, 1924-25.

Resolutions.

Miscellaneous.

Adjournment.

SECTION MEETINGS**Tuesday, April 15, 10:30 A. M.****SECTION ON PRACTICE OF MEDICINE**

Dr. D. Heath Nisbet, Chairman, Charlotte.

(Program must be completed by noon. This Section will meet on Wednesday afternoon with the combined Sections on Practice of Medicine, Chemistry, Materia Medica and Therapeutics, and Surgery.)

1. Attention, Medical Men! Dr. H. D. Stewart, Monroe.

2. The Diagnosis of a Foreign Body in a Bronchus. Case Report. Dr. E. W. Schoenheit, Asheville.

3. The Occurrence of Moulds in the Respiratory Passages. Dr. Mary E. Lapham, Highlands.
4. The Value of a History. Dr. F. D. Adams, Washington, D. C.
5. Adams Stokes Syndrome-Epileptiform Convulsions due to Heart Block. Dr. J. P. Munroe, Charlotte.
6. The Nature of Sprue and Its Relation to Pernicious Anemia and Moniliasis. Dr. E. J. Wood, Wilmington.
7. Insulin Treatment in Diabetes. Dr. C. A. Street, Winston-Salem.
8. Sensitization to Foods. Dr. H. M. Barker, Lumberton.
9. Diseases of the Colon. Dr. H. L. Brockman, High Point.
10. The Prevention of Mental Disorders. Dr. Tom A. Williams, Washington, D. C.
11. Emptyema of the Pericardium. Dr. M. R. Adams, Statesville.

Tuesday, April 15, 10:30 A. M.

N. C. SECTION OF MEDICAL VETERANS AND MEDICAL OFFICERS RESERVE CORPS, U. S. A.

Dr. Chas. O'H. Laughinghouse, Chairman, Greenville.

(This program must be completed by close of this Session.)

1. Our Relationship to the Disabled Ex-Service Men of the State. Dr. I. T. Mann, National Vice Commander American Legion, High Point.
2. The Medical Reserve Corps: Some of Its Needs and How Best to Promote It—Dr. J. Howell Way, Waynesville.
3. The Medical Reserve Corps from a National Viewpoint. Major Glenn I. Jones, Surgeon General's Office, Washington, D. C.
4. Hospital Unit O and Base Hospital 6, A. E. F., Dr. Addison G. Brenizer, Charlotte.
5. The Function of Base Hospitals in War (Illustrated by lantern slides.) Dr. C. S. Lawrence, Winston-Salem.
6. High Rejection Rate for North Carolina Boys as Seen at Fort Bragg. General A. J. Bowley, Commander, Fort Bragg.

Tuesday, April 15, 10:30 A. M.

SECTION ON CHEMISTRY, MATERIA MEDICA AND THERAPEUTICS

Dr. W. T. Rainey, Chairman, Fayetteville.

(This Section will meet on Wednesday afternoon with the combined Sections on Practice of Medicine, Chemistry, Materia Medica and Therapeutics, and Surgery.)

1. Chairman's Address. Some Salient Points in Digitalis Therapy. Dr. W. T. Rainey, Fayetteville.
2. Digitalis. Dr. T. W. Carmichael, Rowland.
3. Etiology of Habit Disease. Dr. W. C. Ashworth, Greensboro.
4. Mercury in Treatment of Syphilis. Dr. K. B. Geddies, Raeford.
5. Arsenical Poison from Neoarsphenamine. Dr. J. F. Nash, St. Paul.
6. The Use and Abuse of Alcohol in Practice. Dr. G. H. Macon, Warrenton.
7. The Practical Application of Polyglanular Therapy in Women. Dr. J. S. Brewer, Roseboro.
8. Sub-Lethal or Stimulating Dose of Radium. Dr. W. D. James, Hamlet.
9. The Shame of Modern Medicine. Getting one's Post-graduate Education in Pharmacology and Therapeutics from the Propa-

ganda of the Proprietary House; a Plea for the more General Study of the Fundamental Principles of these Sciences by the Members of the Medical Profession. Dr. Frederick R. Taylor, High Point.

10. The Necessity for Glucose Tolerance Determination in Individuals with Glycosuria. Dr. William Allan, Charlotte.

11. The Vegetative Nervous System in Relation to General Medicine. Dr. A. A. Barron, Charlotte.

12. Treatment of Hypertension and Associated Conditions. Dr. I. P. Battle, Rocky Mount.

13. Camphor in Pneumonia and Other Diseases. Dr. D. S. Currie, Parkton.

14. Some Observations on the Use of Drugs Over a Period of 25 Years. Dr. J. E. Kerr, Winston-Salem.

Tuesday, April 15, 2:00 P. M.

SECTION ON CHEMISTRY, MATERIA MEDICA AND THERAPEUTICS

(Continuing—program must be completed at close of this session.)

Tuesday, April 15, 2:00 P. M.

SECTION ON PUBLIC HEALTH AND EDUCATION

Dr. R. S. McGeachy, Chairman, Kinston.
(Program must be completed at the close of this session.)

1. Chairman's Address. Dr. R. S. McGeachy, Health Officer, Kinston.
2. Address. Dr. Royal S. Copeland, United States Senator, New York. (This address will be delivered before the General Session on Tuesday evening in the City Auditorium.)
3. The Value of History Taking in Early Diagnosis of Tuberculosis. Dr. J. L. Spruill, Superintendent Guilford County Sanatorium, Jamestown.

Dr. J. H. Williams, Assistant Physician State Sanatorium, leader of discussion.

4. Health and Good Citizenship. Reverend Lee McBride White, Pastor First Baptist Church, Kinston.

Dr. W. L. Poteat, President Wake Forest College, leader of discussion.

5. Control of Malaria in Rural Districts. Dr. L. L. Williams, Surgeon U. S. P. H. Service, Washington, D. C.

Dr. H. A. Taylor, Deputy Health Officer in charge of Anti-Malarial Work in Eastern North Carolina, leader of discussion.

6. The Present Status of the Experiment in Post-graduate Medical Teaching in North Carolina. Dr. I. H. Manning, Dean Medical Department, University of North Carolina, Chapel Hill.

Dr. K. P. B. Bonner, Secretary State Board of Medical Examiners, leader of discussion.

7. Rabies in North Carolina and Its Prevention. Dr. C. A. Shore, Director State Laboratory of Hygiene, Raleigh.

General discussion.

8. Heredity. Dr. W. A. Newbold, Medical Director Caswell Training School, Kinston.

Dr. Harry Crane, head of Psychological Department, University of North Carolina, leader of discussion.

9. Education and Public Health. Dr. E. C. Brooks, President State College, Raleigh.

Dr. G. M. Cooper, Assistant Secretary State Board of Health, leader of discussion.

10. High Rejection Rate for North Carolina Boys as Seen at Fort Bragg. Colonel T. H. McAndrews, Ranking Medical Officer, Fort Bragg.

11. Old Age. Dr. J. W. McNeill, Fayetteville.

Wednesday, April 16, 9:00 A. M.

SECTION ON EYE, EAR, NOSE AND THROAT

Dr. John W. MacConnell, Chairman, Davidson.
Dr. H. L. Sloan, Secretary, Charlotte.

(Program must be completed at the close of this session.)

1. Chairman's Address. Dr. John W. MacConnell, Davidson.

2. Preparation, Treatment and After Treatment of Tonsils, Tonsillectomies, with Report of Five, selected from 200 Cases. Dr. L. L. Simmons, Greensboro.

3. Observations Eye and Throat Conditions in Leprosy. Dr. W. P. Hardee, Durham.

4. Some Complications Following Acute Mastoiditis. Dr. O. P. Schaub, Winston-Salem.

5. Retrograde Dilatation of Esophageal Strictures. Dr. J. G. Murphy, Wilmington.

6. The Mosher-Toti Operation on the Lacrymal Sac (Combined Intranasal and External Operation.) Dr. H. C. Willis, Wilson.

7. Acute Exudative Catarrh of the Ear. Dr. M. R. Gibson, Raleigh.

8. The Salivary Glands in Relation to the Nose and Throat Specialist. Case Reports. Dr. A. C. McCall, Asheville.

Wednesday, April 16, 3:00 to 5:00 P. M.

Rex Hospital

Eye Clinic. Dr. V. M. Hicks, Raleigh.
Ear, Nose and Throat Clinic. Drs. J. B. Wright and M. R. Gibson, Raleigh.

Wednesday, April 16, 9:00 A. M.

SECTION ON PEDIATRICS

Dr. B. U. Brooks, Chairman, Durham

(Program must be completed at the close of this session.)

1. Chairman's Address. Pediatric Possibilities in North Carolina. Dr. B. U. Brooks, Durham.

2. Lactic Acid Milk in Infant Feeding. Dr. LeRoy J. Butler, Winston-Salem.

3. Use of Serum from Convalescent Measles Patients. Report of Cases. Dr. Spencer P. Bass, Tarboro.

4. The Question of Clothes from the Pediatric Standpoint. Dr. L. W. Elias, Asheville.

5. Blood Transfusion in Malnutrition of Infants. Report of Forty Cases. Dr. A. S. Root, Raleigh.

6. Ureteral Catheterization in Children. Dr. Hamilton W. McKay, Charlotte.

7. Report of Case of Cerebrospinal Meningitis. Death from Respiratory Paralysis. Autopsy, Prolapse of Cerebellum. Presentation of Specimen. Dr. R. A. Herrin, Greensboro.

Wednesday, April 16, 9:00 A. M.

SECTION ON SURGERY

Dr. B. J. Lawrence, Chairman, Raleigh.

(This Section will meet during afternoon with combined Sections on Practice of Medicine, Chemistry, Materia Medica and Therapeutics, and Surgery, and will continue Thursday morning at 9:00.)

1. Chairman's Address. Right Angle Position of the Arm after Operation for Carcinoma of the Breast. Dr. B. J. Lawrence, Raleigh.

2. The Treatment of Inguinal Hernia. Dr. D. T. Tayloe, Jr., Washington.

3. Ureteral Obstruction, Based upon a

Study of 150 Cases. Drs. J. F. and J. D. Highsmith, Fayetteville.

4. The Pathology and Symptoms Produced by Slight Degrees of Renal Ptosis. Dr. W. M. Coppridge, Durham.

5. Surgery of Mesenteric Injuries with Reference to Intestinal Viability, Based on Clinical and Experimental Evidence (lantern slides.) Dr. T. C. Bost, Charlotte.

6. The Conservative Treatment of Intestinal Obstruction. Dr. Albert W. James, Hamlet.

7. The Thyroid. Dr. Wm. Scruggs, Charlotte.

8. Sacro-iliac Disease. Dr. Hugh A. Thompson, Raleigh.

9. X-ray Pathology of Bone. Drs. W. F. Cole and H. H. Dodson, Greensboro.

10. Intracranial Hemorrhage in the New Born and Its Treatment. Dr. Thomas M. Green, Wilmington.

11. Conservatism in Ovarian Surgery, with Report of 100 Cases. Dr. Robert T. Ferguson, Charlotte.

12. Report of an Unusual Case of Ectopic Pregnancy. Drs. Moir S. Martin and E. C. Ashby, Mount Airy.

13. Some Recent Thoughts on the Pathology and Treatment of Cancer. Dr. H. H. Bass, Henderson.

14. Horseshoe Kidney. Report of a Case. (Lantern Slides and Specimen.) Drs. H. M. Vann and Charles Phillips, Departments of Anatomy and Pathology, Wake Forest College.

Wednesday, April 16, 2:00 P. M.

SYMPOSIUM ON GASTRIC AND DUODENAL ULCER AND CONGENITAL PYLORIC STENOSIS

Combined Sections on Practice of Medicine, Chemistry, Materia Medica and Therapeutics, and Surgery.

Chairmen—Drs. D. Heath Nesbit, Charlotte; W. T. Rainey, Fayetteville; B. J. Lawrence, Raleigh.

Dr. W. T. Rainey, Fayetteville, presiding.

1. Symptomatology and Diagnosis of Congenital Pyloric Stenosis. Dr. LeRoy J. Butler, Winston-Salem.

2. Dietetic and Medical Treatment of Congenital Pyloric Stenosis. Dr. J. B. Sidbury, Wilmington.

3. Operative Treatment of Congenital Pyloric Stenosis. Dr. R. L. Pittman, Fayetteville.

4. Gastric and Duodenal Ulcer from the Medical Viewpoint. Dr. D. Heath Nesbit, Charlotte.

5. Gastric and Duodenal Ulcer from the Surgical Viewpoint. Dr. Addison G. Brenizer, Charlotte.

6. The Surgical Management of Gastric and Duodenal Ulcer. Dr. Chas. S. Norburn, Asheville.

7. Gastric and Duodenal Ulcer from the X-ray Viewpoint. Dr. C. C. Phillips, Charlotte.

8. The Diagnosis and Postoperative Treatment of Perforated Gastric and Duodenal Ulcer. Dr. T. E. Wilkerson, Raleigh.

Wednesday, April 16, 2:00 P. M.

SECTION ON GYNECOLOGY AND OBSTETRICS

Dr. F. Webb Griffith, Chairman, Asheville.
(Program to be completed at the close of this session.)

1. Chairman's Address—Dr. F. Webb Griffith, Asheville.
2. Prolapse of the Uterus—Dr. R. L. Gibson, Charlotte.
3. Diagnosis and Treatment of Tubal Pregnancy—Dr. J. Ernest Stokes, Salisbury.
4. Disturbed Metabolism in Pregnancy. Dr. B. C. Nalle, Charlotte.
5. Transacral Anesthesia Associated with Caudal Block in Gynecology—Dr. Thomas M. Green, Wilmington.
6. Uterine Radium Therapy. Dr. Douglas P. Murphy, Rutherfordton.
7. The Use of Radium and X-ray in Gynecology—Dr. John D. MacRae, Asheville.

Thursday, April 17, 9:00 A. M.

SECTION ON SURGERY
(Continuing)

WOMAN'S AUXILIARY

to the

MEDICAL SOCIETY OF THE STATE OF
NORTH CAROLINA

Hotel Sir Walter, Raleigh

Wednesday, April 16, 1924, 10:00 A. M.

Mrs. J. Howell Way, Vice-President, Waynesville, Presiding.

PROGRAM

Address of Welcome—Mrs. Clarence Shore, Raleigh.

Response—Mrs. J. M. Milliken, Southern Pines.

Music.

President's Remarks—Mrs. J. Howell Way, Waynesville.

Address—Mother's Aid. Mrs. T. W. Bickett, Raleigh.

Music.

Greetings from Mrs. J. Allison Hodges, Richmond, President Elect of Auxiliary to the American Medical Association.

Business Session.

Adjournment.

Note—All ladies attending the Society are urged to register promptly at the same desk where the doctors register. Wear your badge.

NORTH CAROLINA PUBLIC HEALTH
ASSOCIATION

Fourteenth Annual Session.

Raleigh, Monday, April 14, 1924

Officers

Dr. C. W. Armstrong, President, Salisbury.

Dr. L. L. Williams, Vice-President, Mt. Airy.

Dr. F. M. Register, Secretary, Raleigh.

PROGRAM

1. Call to order by the President.

2. Prayer—Rev. Chas. F. Hudson, D.D., Raleigh.

3. President's Annual Address: "More Restricted Program of Public Health Work in the Co-operative Counties." C. W. Armstrong, M.D., Salisbury.

4. Report of Secretary—F. M. Register, M.D., Raleigh.

5. Report of Special Committees.

6. Appointment of

(a) Committee on President Address.

(b) Committee on Visitors and new members.

(c) Committee on Resolutions.

(d) Other Committees.

7. Pasteurization as a Factor in Protecting our milk Supplies—Thos. A. Mann, M.D.

8. Dentistry as Related to Health—J. S.

Spurgeon, D.D.S., Hillsboro.

Discussion by Chas. S. Mangum, M.D., Chapel Hill

9. Encouragements and Discouragements of the Maternity and Infancy Work in Granville County—J. A. Morris, M.D., Oxford.

Discussion by F. R. Harris, M.D., Henderson.

10. The Value of Voluntary Organizations in Public Health Work—Catherine Myers, R.N., Raleigh.

Discussion by W. A. McPhaul, Charlotte.

1. Municipal Mosquito Control—J. H. Hamilton, M.D., Wilmington.

Discussion by Floyd Johnson, M.D., Whiteville.

2. Observation of Health Work in New York City—Sidney Buchanan, M.D., Concord.

Discussion by C. W. Armstrong, M.D., Salisbury.

3. Duties of the Health Department from the Standpoint of the Health Officer—D. E. Ford, M.D., New Bern.

Discussion by C. L. Outland, M.D., Greenville.

8 P. M.—10 P. M.

1. Midwives—E. R. Hardin, M.D., Lumberton.

Discussion by K. P. B. Bonner, M.D., Raleigh.

2. Address—John A. Ferrell, M.D., Director for the United States, International Health Board of The Rockefeller Foundation, New York.

3. Adoption of Resolutions.

4. Election of Officers.

5. Adjournment.

NORTH CAROLINA HOSPITAL ASSOCIATION.

Seventh Annual Session.

Hotel Sir Wilter, Raleigh, April 14, 1924.

Officers

Dr. L. A. Crowell, President, Lincolnton.

Dr. T. M. Jordan, First Vice-President, Raleigh.

Miss Nina Davidson, R.N., Second Vice-President, Durham.

Dr. Jas. R. Alexander, Secretary and Treasurer, Charlotte.

PROGRAM

9:30 A. M. Meeting called to order by Chairman Committee on Arrangements, Dr. T. M. Jordan.

1. Invocation—Rev. W. A. Strausbury, Raleigh.

2. Address of Welcome—Mr. E. B. Crow, Raleigh.

3. Response to Address of Welcome—Dr. J. F. Highsmith, Fayetteville.

4. President's Address—Dr. L. A. Crowell, Lincolnton.

5. Simplicity of Technic in the Operating Room—Dr. C. M. Strong, Charlotte.

6. A Few Things That Bring Surgery and Hospitals Into Disrepute With the Public.—Dr. Harold Glascock, Raleigh.

7. Some Things that Make Our Hospitals Unpopular—Dr. Jno. Q. Myers, Charlotte.

8. Some Things That Make Hospitals Popular.—Dr. Annie L. Alexander, Charlotte.

9. Psychic Therapy, a Hospital Asset—Dr. Julian Baker, Tarboro.

Discussion led by Dr. J. C. Montgomery, Charlotte.

Adjournment 1:00 to 2:30 P. M.

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10. Preliminary Report Committee on Revisal Nurses Laws With Remarks—Dr. James M. Parrott, Kinston.

11. Symposium of Training Nurses.

(a) A Few Good Reasons For More Careful Teaching to Student Nurses—Miss E. A. Keely, R.N., Highsmith Hospital, Fayetteville.

(b) The Duties of an Instructor in the Small Hospital—Miss McDuffie, R.N., Highsmith Hospital, Fayetteville.

12. What is an Efficient Hospital?—Dr. C. S. Woods, President Protestant Hospital Association, St. Luke's Hospital, Cleveland, Ohio. Discussion led by Dr. J. M. Parrott, Kinston.

13. Service—Dr. Henry Norris, Rutherfordton.

14. Hospital Standardization—Dr. J. W. Long, Greensboro.

Adjournment.

Entertainment by Rex Hospital.

8:00 P. M.

15. Hospital Architecture and Construction. Dr. E. T. Dickinson, Greenville.

16. Hospital Development, Planning and Construction—Mr. Frank E. Chapman, Director Mount Sinai Hospital and Hospital Consultant, Cleveland, Ohio.

Discussion led by Dr. J. P. Munroe, Charlotte.

17. Round Table.

18. Adjournment.

MEETING OF THE

NORTH CAROLINA STATE SECTION OF THE AMERICAN COLLEGE OF SURGEONS

Raleigh, N. C., Hotel Sir Walter,

April 14, 1924.

There will be a meeting of the North Carolina State Section of the American College of Surgeons at the Hotel Sir Walter, Raleigh, N.

C., at 8:00 p. m., April 14, 1924.

Among other important features, there will be considered the following:

Report of the Executive Committee.

Plan for the Junior Candidate Group: H. W. McKay, M.D., Secretary, Charlotte; Discussion opened by James M. Parrott, M.D., Kinston.

This will be the first meeting in which the Junior Candidates ever participated.

The Work of the Judicial Committee of the American College of Surgeons: C. M. Strong, M.D., Chairman, Charlotte; Discussion opened by H. A. Royster, M.D., Raleigh; C. M. Banner, M.D., Greensboro.

Relations of the American College of Surgeons to the Hospitals of the State: L. A. Crowell, M.D., Lincolnton; Discussion opened by A. T. Pritchard, M.D., Asheville; Brodie C. Nalle, M.D., Charlotte.

Of What Benefit are the Activities of the College to the Profession at Large: J. T. Burrus, M.D., High Point; Discussion opened by R. L. Gibbon, M.D., Charlotte; J. F. Highsmith, M.D., Fayetteville.

Program of the Sectional Meetings of the College: W. F. Cole, M.D., Greensboro; Discussion opened by E. T. Dickinson, M.D., Greenville.

The American College of Surgeons—An Educational Movement: C. S. Woods, M.D., St. Luke's Hospital, Cleveland, Ohio.

JOHN WESLEY LONG,

Secretary Executive Committee.

All sessions of the Medical Society and Allied Organizations will be held in the Hotel Sir Walter, except the Tuesday evening session, which will be held in the City Auditorium.

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No. 5

LUMBAR PAINS AND THEIR IRRADIATIONS.—NURO-MUSCULAR FACTORS.

By Tom A. Williams, M.B., C.M.
Washington, D. C.

Reproaches against our profession because of alleged ineptitude regarding lumbar pains and their radiations may I believe be founded upon inadequacies of diagnosis due to the most part to want of knowledge of neurological signs as well as of broad general training. Only by careful consideration of the subjective as well as of the objective signs may an adequate diagnosis be reached in many cases.

The anatomy of the spine and nerve roots must be thoroughly known to begin with because upon anatomical relationships depend some of the disease bearing factors. For example. As the spinal root leaves the meninges carrying with it a prolongation thereof it is subjected intensely to whatever may affect these. It is there that the roots begin to be affected by meningeal syphilis, which may be revealed by the earliest signs of *tabes dorsalis* (paresthesiae or diminution of sensation) arcs are manifest. It is in this situation too that the tubercular process long before interruptions of the reflex first imbeds the spinal roots, giving rise to backache or fleeting pains which are too often neglected or loosely looked upon as hysterical. A very careful clinical study with the most minute attention to changes in the sensibility is required, but this must be supplemented by knowledge of the significance of subjective signs. For instance as to the character of the shooting pains, their location, their provocation by

sneezing, coughing and straining.

Among the valuable objective signs are modifications of the pilomotor reflex, and of the vasomotor local responses, which may alter before demonstrable changes in sensibility. When these latter are well established and are segmental it is usually easy to tell in which root or roots the affection lies. When the spinal cord itself is implicated this becomes still more easy as in the case of extra dural growth reported here last year which Dr. Horgan so successfully removed.

The radicular syndrome above mentioned has to be distinguished from peripheral neuritis. A table of the differential signs is appended.

More delicate is the differentiation of radiculitis from what Sicard has called funiculitis. This is his name for compression or inflammation of the nerve while passing through a fibrous or bony canal. Facial paralysis and meralgia paresthetica are the best known examples of this.

One other differential of vertebral radiculitis is increased albumen in the spinal fluid without morbid increase of cells, but this picture is also frequently seen after cerebral commotion. But the local signs are more valuable here than the examination of the spinal fluid except for its negative value. The chief of these is localized pain in movement along with reflex spasm of the adjacent muscles. Frequently there are faulty attitudes of the spine, shoulders and lower limbs which are automatic adjustments to minimize discomfort. Some of these are shown in the accompanying figures.

A characteristic sign is alteration of gait with scoliosis of the trunk usually towards the affected plexus with a compensatory scoliosis higher up in the spine away from the affected side.

Only when the disease process is advanced is there a loss of the reflexes

*Read at the Greenville meeting of the Tri-State Medical Association, Feb. 20-21, 1924.

Syndrome.	Neuritis.	Radiculitis.
<i>Definition.</i>	Irritation of peripheral nerves.	Irritation of spinal root.
<i>Etiology:</i>	The usual cause.	Doubtful.
Toxin.		
Chemical poisons: Alcohol or metals, especially arsenic or lead.		
Diffuse bacterial poisons aside from local exudation, especially diphtheria and influenza.	Frequent.	Doubtful.
Metabolic poisons: lithemia, arthritism.	Occasional.	Doubtful.
Endocrine imbalance.	Occasional.	Doubtful.
Focal infection.	Possible.	Doubtful.
Tuberculosis.	Occasional.	Frequent.
Syphilis.	Scarcely.	Commonest cause.
Neoplasm.	Doubtful.	To be suspected.
Physical agencies: Cold, trauma, etc.	Occasional.	Especially trauma.
Concomitant of arthritis.	Of the neighborhood.	In the spine.
<i>Pathology:</i>	Usually degenerative from toxicosis, or by strangulation by neurodocitis.*	Often inflammatory; by strangulation, by inflammatory or neoplastic compression.
<i>Onset:</i>	Often abrupt.	Insidious.
<i>Symptoms:</i>		
Pain.	Except in plumbism or pure motor neuritis.	Usual when posterior root is implicated.
Tenderness.	Characteristic, especially of deep tissues.	Absent or minimal.
Conductivity.	Impaired.	Impaired.
Hypesthesia.	Except in early stages, irregularly progressive.	Except in early stages, irregularly progressive.
Sensory dissociation.	Not usual; sometimes pseudotabetic, but never truly of tabetic type.	Occasionally of syringomyelic type in tuberculous radiculitis, of tabetic type in syphilitic radiculitis.
Motor weakness.	Usual.	When anterior root is affected, best marked in tuberculous radiculitis.
Athrophy.	Severe and of long duration except in mild cases.	Less evident except in tuberculous radiculitis.
Deformity.	Contracture and stretching of tendons and ligaments.	Contracture and stretching of tendon and ligaments less marked.
Reflexes.	Impaired except at first.	Impaired.
Trophic changes.	Early and evident.	Scarcely.
Extent.	According to distribution of nerve affected. In polyneuritis more marked peripherally.	In the segmental distribution of the roots affected.
Spinal fluid.	Spinal fluid negative.	Inc. globulin and cells.
<i>Diagnosis:</i>	Increased deep tenderness with or without hypesthesia. Syndrome conforms to distribution of peripheral nerves.	Hypesthesia both cutaneous and deep. Syndrome conforms to distribution of roots.
<i>Differential Diagnosis:</i>	From trauma, osteitis, arthritis, myositis, meningitis, poliomyelitis, encephalitis, myelitis.	From the same.
<i>Prognosis:</i>	Highly favorably upon removal of cause.	Unfavorable in proportion to destruction of sensory fibers. Favorable as regards motor fibers except when dense cicatrices have occurred.

Treatment:

Elimination of the pathogen; metabolic regulations; physical agencies to stimulate local nutrition.

Removal of the pathogen; rest of the regions affected.
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*A term to denote inflammation of the fibrous sheath or bony canal through which a peripheral nerve passes; *e. g.*, the fascia lata for the n. femorocutaneus or the aqueduct of Fallopius for the n. facialis.

usually beginning in the achilles.

Hence, the clinical picture is not difficult to simulate and sciatic neuritis became the most common affection entering the neurological services during the trench warfare on the French front.

There were three types of this, one which is free from pain while at rest, one which improves with exercise and one which is much aggravated by exercise or movement. Hence it is wrong to treat all cases of sciatica by immobilization.

Striking successes occur by utilizing this fact in dealing with sciatica. It is this type of case from which so much credit is gained by manipulators, and by operators who inject air, stretch the nerve and so on.

When the pain of a sciatica is very intense and the disease originates within the spinal canal a very effective method is the injection of the epidural space with an isotonic saline solution through the cordal foramen. This has been used for a number of years by Sicard with satisfactory relief. Recently Forrestier of Vichy has done the same thing in the lumbar and dorsal regions to a single intravertebral foramen. He has tested this by using the radio opaque solution as a diagnostic measure of the penetrability of the space.

Through rest, perhaps immobilization, attention to general health and sometimes massage and passive movements the tenderness of lumbar nerves usually subsided before long. But the vicious attitudes may become habitual, and these induce discomfort and pain so that the patient may continue to complain after the first cause has ceased. A species of malingering may be added to this also motivated by desire for sympathy, compensation or to aggravate others. It is a matter concerning which the most delicate discrimination is required and a study

must be made not only of the neurological signs subjective as well as objective, but to the patients motivations as well. The finding of these latter may lead to error and this is frequent where compensation is in question.

An example of this was where a beneficiary of the Veterans Bureau was half believed to be a malingerer during a four years pilgrimage through their various hospitals. The X ray plates showed deformation of the left articular processes of the fifth lumbar joint which is looked upon as a possible congenital anomaly. But a careful study made me believe that in spite of interested motivations there was a local irritation provoked when the patient made a false step. As a result a fixative operation was undertaken and the patient completely relieved.

Another striking example follows where?

Miss W. H., aged 41, was seen in consultation with Dr. R. W. Conklin at George Washington University Hospital, November 19th, 1923 because of persistently increasing pains in the loins, and vaginal and pubic parasesthesiae, besides difficulty of urination, all of which had lasted about a month. Latterly the pain had shot down the thigh and anterior part of the leg to the great toe. Four years ago similar pains had been removed by a chiropractor.

Examination showed the deep reflexes were greater on the left side than the right with the exception of the Achilles where the left was absent and the right very faint. The plantar reflex was equivocal, while on the left the two outer toes extended. The abdominal reflexes were curiously modified. To a light stroke the upper right was absent and the lower right much exaggerated while on the left side the lower reflex was diminished, the upper

more normal. To a heavy stroke the only modification was an absence of the right upper reflex.

The sensibility on the left side was modified as follows: Pain was aggravated by sneezing. The lower sacral domain was hypoaesthetic to cotton and hyper-aesthetic to pin prick. In the first sacral area, there was also a hyperaesthesia to pin prick except mesially, where sensibility was diminished. There was a very marked loss of vibration sense in the fifth lumbar distribution on the left. The left calf was incessantly tender to pressure only in its middle.

Motility. Adductors and abductors were less powerful in the left than the right thigh. The movements of the left leg were weaker than the right.

The diagnosis made was a radiculitis probably of infectious origin contributed to by the long continued standing in the heat while watching a procession.

The patient was again examined a week later because she also complained of pain in the neck, but this I attributed to the withdrawal of spinal fluid some days before. In this spinal fluid, sixteen cells per c.m. and an increase of globulin might have been attributed to blood contamination. The right achilles was absent, only the left plantar reflex flexed distinctly, on the right there was a tendency to extension especially in the other toes. The abdominal reflexes responded better though the right upper was still diminished. There was no diminution of sensation anywhere, but there was still a hyperaesthesia of the left thigh to prick and of the calf to deep pressure. The patient also complained of tenderness in the right thenar region.

Diagnosis. This was looked upon as an organic condition viz.: an inflammation of the lower spinal nerve roots predominating upon the left side and probably due to an infective process elsewhere, perhaps in the tonsils before their removal. The reasons for this were the impairment of the achilles reflexes, the inequality of the knee reflexes, the absence of the plantar flexor

response, the hypoaesthesiae and paraesthesiae in the distribution of the lower sacral nerves, and the tenderness in the mid calf to pin prick in the situation noted above. In the presence of these indications the pains and Dejerine's sneezing sign were highly significant.

That the lesions were inflammatory was indicated by their amelioration in a week and their eventual recovery. In this respect the case may be compared to one seen with Dr. Mason and described at the Medical Society in a paper on Polyneuritis of Infectious Origin some few years ago in which a general infection causing radicular pains began to improve immediately after treatment and cleared up in less than a month.

In this case, probably of a more acute character, the process of immunity production and resolution of the effects of the infecting organism required only a short period. That the period coincided with the rectification of painful psychic episode need not allow the latter to mask the neurological picture set forth in the examination nor to invalidate the diagnosis of radiculitis, for the improvement had already set in before the psychological aspect of the case had been dealt with.

Discussion.

Dr. Gideon Timberlake, Baltimore, Md.

There is a pamphlet on pathology and symptomatology of the prostate gland which has to do with referred symptoms from the prostate. It is generally conceded, I think, that the prostatic nerve supply comes from the tenth, eleventh and twelfth dorsal. We know that there are definite pains in prostatitis. The pains are not lumbar strictly, because they are migratory. In one case I found it as high as the stomach. This particular case had a very small fibrous prostate, unusually small but very firm. He was too young to give the impression of malignance. We started on the assumption, from our knowledge, that he had a prostratitis which he apparently did not know he had; he had been treated for stomach trouble for so long. He

had pain at the tip of the ensiform cartilage. These pains went down to the perineum, sometimes as far as the knee, and occasionally to the great toe.

Of course we have to have respect for the other side of the thing, that there are sacrolumbar strains, etc. It seems to me in many instances where you determine there is a prostatitis and relieve the degree of inflammation and lower the pressure it gives good results. I would like to have you throw some light on it from a neurological standpoint.

Dr. Williams, closing the discussion:

I am very glad that Dr. Timberlake brought up that question, for no man can do justice to lumbar pains. I tried to treat the subject from the neurological standpoint only. To do it justice you have to have a symposium, with a gynecologist. Things that come within Dr. Timberlake's purview—he being a genitourinary surgeon—are responsible for lumbar pains. The orthopedist must come into the symposium, and so must the urologist. I merely tried to point out a few things that are often overlooked by those who are not acquainted with neurological signs. Dr. Timberlake has touched on a very interesting problem. It is a very difficult matter. I doubt if we could get anywhere if we were to talk all day about it, and I do not propose to go into it. There are strong reasons against Mackenzie's hypothesis. It is scarcely credible, in common sense, that the patient with angina who feels a terrible clutching in the heart does not really have pain there. I know it is said that only when the peritoneum is dragged upon is there pain in the viscera, but that is one of the things that have to be decided. Mackenzie and others believe there is no such thing as visceral pain, but that all pains are peripheral and are referred to the viscera. We do know that disorders of the viscera will cause referred pains that seem to go elsewhere. The point is that when a patient has pain in the back we have to make a very thorough investigation, not only of the nervous system. Because we find a diseased prostate or mis-

placed uterus or chronic appendix, that may not be the cause of the pain in the back. There may be other causes and that may have nothing to do with the pain in the back. One must analyze the case. Pain is a neurological symptom, and this thorough study is all that I plead for.

RESERVE OFFICERS

General John Ross Delafield, New York, President of the National Reserve Officers Association, was accorded the privilege of the floor and invited to discuss that phase of the President's address which had to do with the Reserve Officers.

General Delafield:

I have a message which concerns not only those of you who were in the Service and are reserve officers, but also every one of you as leading men in your communities. It is a message of the future of our country. It is sometimes said that we are never going to have to meet war again. I wish I could believe that. Under certain qualified conditions it may become so. But the history of our country in the past has put us in the place where we have had to meet war ourselves at least once in a generation. Experience in the past is, as you all know, a true guide for the future, but I think, gentlemen, there are things we can do that will minimize the chances of war and perhaps free us from war if other nations co-operate. There are things which have developed and grown up in our consciousness through our experience in the last few years. At the time of the great Civil War we realized that every citizen, every man, in this country had to fight. But we did not take advantage of that lesson, and we did not, I believe, because it was civil war and we thought that other wars could never be like it. The Spanish War found us unprepared again. You doctors know better than I do what it was that killed our men—certainly it was not the bullets and shells of the enemy. We know we owe the lives of those men to our unpreparedness,

Then came the great World War, and I suppose you realize as bitterly as I do that we lost thousands of men—thousands of lives and thousands of maimed—because we were not prepared. You know of examples of replacement units that went into a regiment, and the proportion of losses in the replacement unit to the seasoned troops—was sometimes twice, sometimes three times the number of losses, on the same line, and their officers, theoretically trained and practically trained as well as we could train them in the time given, had not had practical experience in the sense that the men seasoned in the fighting had had it. Gentlemen, our losses in money were very great, but they do not count beside the loss of those tens or hundreds of thousands of lives in the last war through lack of preparedness. Our Congress, after that war, fully realized the situation; they realized that wars today are fought by the citizens themselves, not by standing armies or by the national guard—those bodies must be too small—but by the united strength of the nation, by the civilian citizens. They gave us a National Defense Act to cover that situation.

The National Defense Act is a wonderfully worked out plan for the citizens to protect themselves and if possible to prevent war. It is the most wonderful plan that has ever been proposed in this country, perhaps in any country, and we have the opportunity to put it into effect. I shall analyze a few of its elements.

In order to make this citizen army the really effective power the whole plan has been re-arranged, the regular army still remaining a very small body of men, relatively. It is very little larger today than it was in 1914 or 1916. It was then about 106,000 men; today about 120,000 officers and men. That regular army has all the functions it had before, in the Philippines, to do the police work necessary along our borders, to help in minor expeditions. All that work it has just as it had before, and it has in addition the tremendous new job of preparing the citizens of this country so that if trouble ever

comes they will be ready to defend and protect themselves and their institutions. Now, that involves not only working out some system by which the citizen can make himself useful quickly enough in defending his country, but also the expense of getting him ready—the expense of supply and of organization. In other words, the War Department has become a body of great experts in the science of war, great teachers, great instructors, in matters of defense. They have a different relation to us from that they had before. They do not stand apart; they are right in among us, ready to help us, conscious that they themselves cannot defend the country unless the citizens do it and they help the citizens to accomplish it.

The second element under the National Defense Act is the National Guard. No matter how well the citizen is prepared, he cannot get ready to meet the enemy immediately, and somebody has to be ready. That is the function of the National Guard. The National Guard is much too small today, only about 165,000 officers and men. In the old days we used to think that number ample, and it was ample, but today we ourselves have demonstrated what can be done in the way of moving troops. If our navy did not prevent or could not prevent invasion, that 250,000 men might have to hold the country against vastly superior forces until a citizen army could get ready. Gentlemen, they are the first line of defense, the National Guard and what can be spared from the regular Army. They deserve our full co-operation.

The third element is the citizen army. That is the body of all our citizens capable of bearing arms, of our citizens capable of helping in the problems of supply, of our citizens capable of helping in the science and knowledge necessary in modern warfare, of our citizens capable of helping to work out the problems concerned in making a man efficient, such as the problems you surgeons and doctors would have. The citizen army comprises our full manhood. How can that citizen army be organized to make itself useful? I

think all of you read a few years ago the statement of a man prominent in national life, but who had had no experience in national defense. He said, "If we are ever attacked the citizens of this country will rush together, bringing their shotguns and rifles, coming in their automobiles and on trains, and will beat off the enemy in a few days." There was an element of truth in that statement, for he saw that the citizens had to defend the country, but what he did not see is that the citizen unorganized is helpless, and that those groups would have been beaten to pieces in a short time by the enemy. There was an element of rightness in what he said, and we have to supply something to overcome the element of unrightness. The National Defense Act does that. It gives us two bodies of officers, the reserve corps and the enlisted reserve corps. Those bodies are to make our men effective fighting forces. The officers' reserve corps and the enlisted reserve corps form what is called the organized reserve. It is a great army which reaches all over the United States, from the highest corner of Maine to the lower end of California, from Oregon to Florida, and also into the colonies. It is a great army with the lower grades left out. It is the great skeleton of officer and non-commissioned officer material of an army of four million men. It is roughly divided into two parts. The territorial group consists of officers distributed over the country, in the towns in which they live, to receive and train the drafted man or the volunteer at once, before he leaves home. That system reaches like a great net all over this country. In every town there are officers today ready to receive the enlisted men when they are drafted. In many towns they are the non-commissioned officers, the sergeants and corporals, and some of the specialties. This system, if it were perfected, would have this result—in case we had to defend ourselves and had to make ready for war and men were called to the colors, the men would go to the officers in their own towns and would

start training the day they were drafted, and would begin receiving supplies at once, uniforms, etc. This requires that these officers be thoroughly trained; these officers must know their jobs. The whole plan would fail if you had to send off the officers somewhere to learn their jobs and come back and train the troops. The plan contemplates that these officers be trained and ready every day.

There is another group of reserve officers. As you know, the regular Army and the National Guard are way below their wartime strength and effort will be made to build the National Guard and the Army up to their wartime strength. That requires that there be trained and skilful officers ready to join those bodies. They will not be drawn from this territorial organization of which I have spoken, for that must be complete.

Then there is the third group, the group of scientists and specialists, the group of men who attend to problems of health and supply and administration and overhead. There are officers for that work also.

Gentlemen, that system is not a system to make this country into a militaristic country. It is not military, is it? It is a system to fit the citizen to protect himself and to protect his country and to organize to do it. In this great army that I have just pictured to you there are very, very few professional soldiers; the most of it is composed of civilian citizens. It is not our main line of activity; it is not our desire to fight, but we do not want to be beaten and do not want to see our institutions overturned in case we have to fight. There is no militarism about it.

Let me give you an example why it is not militaristic. You remember the line of fire in the recent war ran from the North Sea to the Alps and from the Alps to the Adriatic. Something came in between, and it was Switzerland. I suppose you know that when the war broke out the German generals had a plan for seizing certain strategic places in Switzerland as a base from

which to attack France, but I don't know if you know why they didn't do it. Switzerland has no regular army, and it is a country of only about three million inhabitants. But it has great experts, experts in the science of war, and they are great teachers. Every man in Switzerland gets his military training, but it is for only a short period and he understands why he gets it. He understands that it is up to him if Switzerland is to continue to exist. There is no objection, so far as I have heard, to their system of citizen training. When war was declared Switzerland, knowing of that plan of Germany, mobilized in three days three hundred thousand men, well equipped and under well trained officers. That was ten per cent. of their population. The German general staff changed its plans in a day, for it would have been a very serious thing to add Switzerland to the number of its enemies, and they might not have been able to seize those strategic positions, anyway. Now, did Switzerland go into the war? No. Is it a militaristic country? No, not at all. It is a free republic, but it is as well defended as any country in Europe, and it has to be.

Gentlemen, that is what the National Defense Act means to us, but let us see what more it means. Without going to the limit of drawing in ten per cent. of our population, as Switzerland did, but only drawing in our officer personnel, our non-commissioned personnel, our scientists and specialists, we can have a system of protection infinitely greater than anything Switzerland had at the time of the last war; we can have the outline of an army of four million men. Now, it is true that Germany and Austria and their allies had twenty-three million men, but it is also true that an army of four million intelligent, free, well officered, well equipped men, is a factor that will deter any nation from attacking us and from going to war with any other nation if they were perfectly sure it would bring us in.

To put a very personal view on this thing—I have two boys. One is in

college and the other will be there in a few years. I do not want them ever to have to go to war; I do not want them to have to fight. I have seen it from many points of view; I have been through part of it; I have studied it, and I know what it means. I have studied all these plans to prevent war and to try to defend our nation. In my judgment, nothing has been suggested that will prevent war; nothing has been brought forth, and I see no hope except this one, the National Defense Act. If we put that into effect; put that plan into effect; put that citizen army into effect; have it thoroughly organized; have its officers, its non-commissioned officers, its scientists, its specialists thoroughly trained to know what they are going to do, that, to my mind, means peace, means that my boys will never have to fight and that your boys will never have to fight.

I have been talking about the National Defense Act and how to put it into effect. Well, it is put into effect in a very large way, because we have these eighty thousand reserve officers and ———— thousand non-commissioned reservists today. But there is certainly something very wrong to keep us from putting it through. Last summer we wanted to train some of these officers, for the system is no good unless the officers know their jobs. But all the money Congress would give us would train only sixty-two hundred of those eighty thousand officers, giving them two weeks' training, and it would take twelve years to get around and to give those men a second period of training. Is that man going to stay efficient, going to be kept up to date?

Officers of the regular army have to be assigned to different parts of the country and have to be on the job all the time, because the reserve officer is a civilian citizen and can only give it a little of his time, and the only man who can attend to it is the regular army officer. He has to have means to do his work, has to travel around and see these officers, to superintend their correspondence courses and other instruction, has to have facilities for his work,

has to have a chair to sit in and paper to write on and blanks for records. That requires money, but not much money. Last year the appropriations committees of Congress undertook to cut out all that, so that there would be no possibility for any army officer to do that work. Then it became very obvious that someone had to explain it to the people and get the people back of it.

We have in this country the ex-officers of the World War, who gained their knowledge and experience in the most terrible war we have ever known. Every year a few pass out, or for some reason or other are no longer able to be in this system. But they can form a great nucleus by which to bring younger men into this body. If we lose the chance now we shall never have it again. A man once said to me: "The United States is like a farm in good shape, with buildings, stock, etc. The owner makes money and he has the choice of either using the money himself or putting it back in maintenance and equipment. Suppose he takes it for himself—then he will gradually lose his equipment, and it will cost him immensely more to buy new equipment than it would to maintain what he has." Now, that is the position of the United States—or some people think it is. And some think that we can throw away all that we have and then build it up again when we are attacked, but it will be at an immensely greater cost in men and money. Maybe we can build it up again, but maybe we cannot. We are not quite in the position of that farmer because, if we lose this opportunity, we shall never again, in my opinion, have a chance to put this voluntary system in effect. There is in this situation an obligation on the citizen which the citizen has not realized. There is an obligation of the civilian citizen, an obligation largely of the leaders of our people, especially an obligation of men such as you are, and that is to make the people understand what the plan is and what it means and why it ought to be put through. You can see that it is put through in your

own communities. The reserve officers' association is merely an organization of reserve officers to do that civilian duty so far as the reserve officers are concerned and to try to put the plan of national defense through. They are organized for that purpose solely, but it is not their duty any more than it is your duty and the duty of every patriotic American and right-thinking man in this country. Congress has got to keep those officers trained by giving them money enough; Congress has got to give the facilities for bringing in the younger men under this plan.

Gentlemen, I do not know, of course, your organization, but I know this—there are men today who never did have the opportunity to go into the active fighting forces of this state and this country but who want to put this through, and who are thinking how various organizations can take up this work and see that this patriotic duty is performed. Now, whatever the organization may be, whether it be a civic club or a scientific body, whatever the organization is it can have this as one of its objects, and it will require very little time. But, gentlemen, the truth of the thing is that it depends upon the individual to put it through. I will give you an example. I got word several weeks ago that a certain Congressman was very earnest and desired to see the National Defense Act put through. I knew that Congressman was a Socialist and came from a Socialist state which had practically put the National Guard out of existence in that State. I did not believe the report which I had, so I went to see that Congressman to find out. After talking a little while he interrupted me and said: "I want to see the citizens prepared to defend themselves; I want to see the officers trained. I am for it. The only people against it are those blankety blank pacifists, and you can't talk to them anyhow." That man knew what the National Defense Act is for and, like every reasonable man who understands this thing, he is in favor of it.

I am here to urge everyone of you

to do what you can to put this plan through and not let it fail. We have an unique opportunity to save it for our country. I have taken a good deal of your time and interrupted your serious discussion, and I want to thank you for your attention.

Dr. J. Howell Way, Waynesville, N. C.:

I move that the Association extend a rising vote of thanks to General Delafield for his presence and his very timely remarks, and that the subject matter of his address, with some other things which will come later, be referred to the Council for consideration at this session.

This motion seconded and carried.

SOME FEEDING FALLACIES.

Wm. P. Cornell, M.D., Columbia, S. C.

In considering nutritional disorders and feeding problems we must remember that protein is the tissue builder; carbo-hydrate the chief fuel, and the fat is stored for reserve fuel. "The fats burn in the fire of the carbo-hydrates" and therefore we need a balanced ration.

Protein, both acid and alkaline, are converted into amido-acids in the intestine and are then synthetized back into peptone during absorption through the cells covering the villi of the small intestine.

Irritation of the mucous membrane of the small intestine, whether produced by purgative drugs or acid, fermenting food stuffs, impairs or destroys temporarily the synthetizing function of the villi and we then get absorption of partially converted or unchanged foodstuffs with consequent overburdening of the liver's detoxication function and the escape through it of foreign proteins and sugars, resulting in the so-called auto-intoxication.

The primary seat of the trouble is in the intestinal mucous membrane, but

the trouble itself, the absorbed abnormal food products, is in the tissues, and the only means for their elimination is by way of the kidneys, breath and skin. At least, this is the way it appears to me.

Two things must be brought about before proper nourishment can be re-established. The congestion of the intestinal villi must subside and the blood must contain sufficient water to keep in solution, and in sufficient dilution, the intoxicating agents so that in their passage through the eliminating organs they will not irritate and impede their functions.

Physiology does not include the intestinal tract among the eliminative organs, and about the only thing drawn from the tissues by increased bowel movements is water, and some alkaline salts to neutralize intestinal acidity. This withdrawn water causes an increased toxæmia through concentrated blood and impeded kidney action.

In nutritional disturbances with toxæmia it appears irrational to administer purgatives. Instead, the intestinal mucosa should be rested by stopping food intake and the giving of large quantities of water which rests the bowel through dilution of its irritating contents and, at the same time, secures absorption of enough water to dilute tissue toxins and enhance their conveyance by the lymph and blood to the eliminating organs for excretion.

Once the toxæmia is overcome, as shown by clearer mentality and better feelings on the part of the patient, then food must be administered of sufficient caloric value to maintain strength, and this means a balanced ration with especially sufficient protein to repair tissue loss and to maintain weight.

The accompanying list of articles commonly used in infant feeding will show their composition and faults, and only several will have to be especially noted as being particularly fallacious in value.

Barley water is totally unbalanced being a pure starch. Its food value is only three calories per ounce, and a six months old baby, needing 672 calories

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as represented in one quart of breast or cows milk, would have to take seven quarts of barley water and then would still have to consume its own body protein.

Albumin water, one egg-white to one pint of water, contains but one calorie per ounce and is a pure protein which is frequently injurious and produces urticaria. If the baby does get his required three ounces of fluid per pound body weight, or forty-five ounces, he would only get forty-five calories in the twenty-four hours, and quickly starve.

Blood expressed from meat, beef juice, has only three calories per ounce, and the regulation dram dose every three hours could only give the infant twenty-four calories per day, which would only make him show his acute starvation hunger, and, by increasing his appetite, increase his suffering.

Panapeptone, Liquid Peptonoids, and allied alcoholic placeboes, contain about fifty calories per ounce and, to give an infant its caloric needs, or 672 per day, would require one pint a day, and the next day we would have to sign the death certificate, "Infanticide, from acute alcoholic poisoning."

Especially dangerous is the habit of using these four products during the rest period of digestive upsets, for the mothers, noting the great improvement during the succeeding hours, erroneously believe that these, and not the rest, caused it. She notifies the doctor that he need not return unless sent for and then proceeds to keep the infant on these "wonderful foods" with the result that in a week or two her baby has gotten into an acute inanition from which the come back is difficult. We should go back and give something to feed upon the next day.

Discussion.

Dr. R. M. Pollitzer, Charleston, S. C.

Breasts were not given women for ornament alone, but many doctors permit women to take babies off the breast because of inconvenience. Only a few doctors consider the subject as of any

importance, but I believe it is just as important to take the time to figure out the proper food for the infant as to maintain asepsis in surgery. Surely this is so if one considers the tremendous amount of infant morbidity and mortality. Others consider the subject uninteresting; if so, they should not handle it. Others consider it very, very difficult, but that is not so. The impression arises because so much has been written by so many men. There are two principles: First, to know the baby, to get the proper history and a decent physical examination. If you don't do that you will call cases difficult feeding that have pyloric stenosis or tuberculosis or syphilis. Then you must know the food. The general principles are that the child to be properly fed must have food of the proper kind from a nutritive viewpoint; then there must be sufficient calories to permit gaining. Then there must be proper intervals of feeding. Lastly, I maintain that if babies were fed properly, especially if given a sufficient amount of food, and more protein and not so much carbohydrate, there would be fewer cases of rickets, fewer cases of convulsions, and not so much malnutrition.

Dr. Cornell, closing the discussion.

I wish to cite one case, giving just a short history. Baby Jacob James, colored, first child of mother of seventeen years. Foster mother fed on one teaspoonful of condensed milk to eight ounces of water, which gave him thirty-six calories a day. It was a case of acute starvation. I repeatedly am called to kids in the country whose mothers have taken some proprietary food and diluted it down to about one-twentieth of what the child should have in food value, with no tissue building elements whatever. We must know the food the child is getting or else we can not intelligently change to a proper food. It is so common that babies are put upon wrong formulas.

THE DIANOSIS OF FAILING COMPENSATION IN VALVULAR HEART DISEASE.

By Garnett Nelson, M.A., M.D., McGuire Clinic,
Richmond, Va.

Mr. President and Fellow Members:

The paper that I wish to present has for its object a consideration of the importance or significance of the facts that may be obtained when we are studying the cardio-vascular system of a patient with valvular disease, and attempting to determine whether or not compensation is failing, and the methods of examination by which these facts may be gathered; that is the relative significance of isolated facts or groups of facts, and the relative value of various methods of examination.

I am using the word "failing" when I say failing compensation to relate to both the present and the future, but not the past; a compensation that is failing while we are watching a patient, or that is likely to fail under certain conditions of occupation, habit or environment, and not an already broken compensation.

The question we have to ask ourselves boils down to this: Can we examine an individual's circulation and determine by our examination alone what work the heart is capable of doing? In the answer to this question lies our chief if not our only reason for examining the heart. All we want to know is what it can do, whether or not it can meet the demands made on it by the individual's organism as a whole and do whatever it has to do toward maintaining a normal circulation under given conditions.

Of course we have to admit that this is not by any means always possible. We have to admit that the only real test of what a heart can do is what it does do when an individual is enjoying the normal activities of life. We now and then see very large hearts, beating at a rate of 100 or more while the patient is resting quietly, with a total and

complete arrhythmia, and numerous murmurs; hearts that we would think incapable of any sustained effort, but which are as a matter of fact maintaining a very good circulation, sufficient, for example, to stand thirty-six holes of golf in a single day without any marked discomfort.

Perhaps the most notable example of serious heart disease in which we cannot depend on our findings when we examine the circulation is angina. Here there may be no conspicuous symptoms nor signs except the patient's statement. He tells us that under certain conditions he has angina, and we have to accept his statement and let it go at that. There is frequently nothing that we can discover to prove or disprove what he says.

However, although we know that there is at present no method of studying the circulation that will enable us to be absolutely correct in all cases, still we can be so generally, and there are certain data whose significance possesses a definite and clear cut value, a significance whose value we must measure, and there are certain methods of study which are valuable in direct proportion to our familiarity with and careful use of them.

All valvular disease must be divided into two general classes: acute and chronic.

In both acute and chronic disease there are certain things that we must know, namely the size of the whole heart or its separate chambers, the rate, the rhythm, the sounds, the condition of the arteries, the systolic and diastolic pressures, and the presence or absence of engorgements or anemias.

And, as intimated above, we must take a careful history, paying due attention to all possible etiological factors, as well as environment, occupation and habits, together with any subjective symptoms that may develop under given conditions.

I am omitting a discussion of the electro-cardiograph and all other complicated mechanical methods of study, not from any lack of appreciation of their value, but because their practical

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usefulness, except in certain clinics or hospitals, does not for the present amount to very much.

After taking a careful history the most important single estimation to make is the size of the heart. In all valvular disease, as a rule, the process of establishing and losing compensation may be divided into three very definite stages; first, that in which compensation has not yet been established, the heart having undergone no enlargement whatsoever; second, that in which compensation has been established, the heart having enlarged to a greater or lesser degree; and third, that in which compensation is failing, the heart as a rule undergoing at the same time still greater enlargement.

Any change in the size of the heart possesses, therefore, a definite significance, usually in direct proportion to the amount of enlargement, and, of no less importance, bearing a measurable relation to the time it takes for such enlargement to develop.

The amount of time necessary, or the rate of enlargement, is peculiarly significant in acute valvular disease. In acute rheumatic mitral disease, for example, we must all view with alarm a heart enlarging so rapidly that in a few days or even weeks the apex impulse is moved out of position from one to several inches. On the contrary one of the most reliable signs of improvement when we are trying to correct a broken compensation is the gradual return of the apex impulse towards its normal position.

Although I realize the folly of radical statements I wish to be so emphatic in regard to the importance of observing the size of the heart in valvular disease that I do not hesitate to say that no matter what we may hear in the way of murmurs we can disregard them so long as the size of the heart remains unchanged. It is certainly true that failing compensation can be ruled out for the time being.

On the contrary, any material enlargement of the heart occurring in a few days or even weeks is of itself conclusive evidence that compensation is

failing, that is, conclusive evidence that in the presence of that particular valvular lesion under the conditions under which the observation is made, whether at rest in bed, or up and about, enjoying to a greater or less degree the normal daily activities, the heart is unable to meet the demands made upon it by the circulation.

The Methods of Studying the Heart's Size.

The usual methods of making a routine examination are, of course, employed, namely, inspection, palpation, percussion and auscultation. In addition the fluoroscope should be employed if possible, and a roentgenogram made. However, as a rule, they are not necessary. In fact usually all that is necessary is to locate the position of the apex impulse. Here there are two things about which we should be careful; first, to remember that the apex impulse of infants and young children belongs above the fifth rib and about as far out as the mid-clavicular line, and does not drop down and inwards to the normal position of the adult until about twelve years of age; second, we must be careful not to confuse the maximum cardiac impulse with the apex impulse. The maximum impulse may be close to the sternum, or even in the epigastrium, while the apex impulse is far beyond the normal limits.

The apex impulse can only be out of position under the following conditions: (1) congenital malposition; (2) a high diaphragm; (3) a low diaphragm; (4) something pulling the heart out of place, such as pulmonary fibrosis; (5) something pushing the heart out of place, such as fluid in the pleura; or (6), an enlarged heart.

By the careful use of inspection, palpation, and auscultation, we can practically always locate the apex impulse very exactly. Percussion is not of much value. Of course, we can frequently discover by percussion a markedly enlarged heart, but I do not believe that there is a man living who can accurately percuss out the borders of the heart. An otherwise inexplicable malposition of the apex impulse should

mean to us an enlarged heart.

The Rate of the Heart.

In order to appreciate the value of rapid heart action in valvular disease we should, if possible, know the normal rate for that particular individual. I say this because the rate of normal hearts is very variable. Usually we consider a rate below 60 as a bradycardia, and a rate above 82 with a patient at rest as a tachycardia, but there are many notable exceptions to this. It is said that Napoleon's pulse rate was 40, and Cabot reports a pulse rate of about 100 in a medical student whose circulation was normal.

The particular significance of the rate in valvular disease is best indicated by an illustration. Suppose that we have a patient with rheumatic mitral disease whom we think ready to release from rigid treatment. Suppose that this patient has a heart rate below 80 at rest. Now, suppose that on trifling exercise such as getting from the bed to a chair the pulse rate becomes 100, and remains there more than several minutes. This means failing compensation, or in other words that the heart cannot yet meet the demands made on it by even such trifling exertion.

The only important precaution to take in estimating the number of beats of the heart is to actually count the heart-beats themselves, and not merely the pulse. It so often happens that there are a number of heart-beats too weak to come through to the wrist, and there is consequently a marked deficit between the rate of the pulse and the rate of the heart.

The Rhythm.

It is impossible in this paper to go into a full discussion of the various arrhythmias. In valvular disease the significance of arrhythmia depends to some extent on the kind of lesion we have, and also on the circumstances or conditions under which we observe the arrhythmia.

For example, an arrhythmia developing in aortic regurgitation is of more significance than one developing in mitral disease. The reason for this lies in the fact that even the very large heart,

the ox-heart of aortic regurgitation, as long as compensation is preserved, beats regularly, and any arrhythmia developing under any conditions means that compensation is failing under those conditions. It is probably true that in any valvular disease any arrhythmia, except the physiological sinus arrhythmia, should be viewed with more or less uneasiness. At any rate, it is certainly true that just as an undue response in rate to trifling exercise is significant, so an arrhythmia that develops in response to trifling exercise is significant. To illustrate, we have a patient with a mitral lesion and a moderate hypertrophy and a slow and regular heart at rest, but a heart that develops an arrhythmia after certain exercises, such as hurrying up a flight of steps. Then the significance of the arrhythmia in that particular case is that the heart has not sufficient compensation to stand that particular exertion.

The Methods of Studying Arrhythmias.

It is here in particular that we are unable to do really correct work without an electro-cardiograph. Even auricular fibrillations, heart blocks, and certainly right-sided or left-sided preponderances, may escape us without it. But the vast majority of significant arrhythmias can be detected very simply.

We have to bear in mind that there are two kinds of arrhythmias, an arrhythmia of rate, and an arrhythmia of force, and that of these the latter is the more significant. The heart should not only beat at regularly spaced intervals of time, but each successive beat should have exactly the same force, the heart beating in accord with the well known physiological law of maximum contractility to all stimuli. Therefore, although we may get an arrhythmia of rate from conditions outside of the heart, an arrhythmia of force must mean impaired function due to disease of the heart itself, and a disturbance of one or more of its peculiar physiological properties, particularly the conductivity, elasticity, or tonicity of the muscle, what we commonly call muscle fatigue.

In investigating the presence of an

arrhythmia one important precaution is to study the rhythm of the heart itself and not merely the rhythm of the pulse. A very simple way of studying arrhythmia of force is to take the blood pressure. Except for the slight tidal rise that may occur during inspiration, and fall that may occur during expiration, exactly the same sound should come through at any given point. It frequently happens that with a heart beating at a given rate and apparently with a given rhythm, if we will take the pressure we will find that not all the sounds are coming through at the point where in reading the systolic pressure we have found that some of them came through. As a part of a routine pressure record we should make this observation, and put down as part of our written record a statement as to the rhythm of force as observed by the intensity of the sounds at a given point.

The Heart Sounds.

In determining the significance of any murmur or abnormal sound we must take into consideration several points: One, its time in the cardiac cycle; two, the point of maximum intensity; three, the direction and amount of transmission; four, the effects of exercise, respiration and posture; five, its relation to the other sounds of the heart; and six, the attributes of the sound itself, namely, the pitch, duration, quality and intensity.

In the first place we must try to decide to what extent the heart sounds, whether valvular or muscular, enable us to measure compensation, and we have to bear in mind that for this particular purpose the sounds heard at a single examination have only a limited significance. Certain sounds, in particular systolic apical murmurs, or soft systolic murmurs heard over the base, have of themselves no significance, but fall into that group that we unfortunately call functional murmurs. I say unfortunately because it seems to me a misnomer when we are trying to determine the functioning capacity of the heart to apply the descriptive adjective functional, to those murmurs

that give us no indication whatsoever as to its function, and that, therefore, have absolutely no significance.

It is proper to repeat myself at this point and remark again that in the absence of other evidence of failing compensation systolic murmurs have no significance. In fact, the whole purpose of this paper is lost unless I emphasize this point. We so often see patients told they have heart disease, refused life insurance, rejected for the army, forbidden athletics, and frequently converted into psychopaths on account of their "heart disease", compensation is failing, and no evidence when there is no evidence that the heart is unable to meet the demands made on it by army life, athletics, and so forth.

Although any attempt at measuring the significance of heart sounds at a single examination lends itself very readily to error, on the other hand when we are making daily or repeated systematic studies, changes in murmurs of themselves as well as their relationship to the other sounds of the heart are of very great value in estimating compensation.

The trifling significance of systolic murmurs does not obtain to quite the same degree in diastolic or presystolic sounds. It is certainly true that we rarely if ever see a true mitral stenosis with its accompanying presystolic murmur, in which compensation will remain unbroken for a great number of years unless the heart is protected against strain or muscle fatigue.

Progressive changes in the murmur itself and the other cardiac sounds may be of themselves of great diagnostic value. In order to conclude that compensation is not failing the muscular element of the first sound should remain clear, and the accentuation of the second sound in the valve behind the lesion should be constant. To be more clear, a murmur whose intensity is fading as we observe it from day to day, if accompanied by a loss in the muscular element of the first sound, and a weakening of the accentuation of the second pulmonic suggests failing compensa-

tion. To this extent, and to this extent only to my mind, can we use the murmur itself to measure compensation, that is with a patient at rest. It is certainly true that the louder the murmur the less its significance as far as determining what the heart can do goes.

In studying murmurs we must bear in mind that all systolic murmurs are heard best with the patient lying down, and that the presystolic mitral murmur is heard best with the patient erect. In double mitral disease we can demonstrate this over and over again. Frequently with the patient erect the only audible murmur is presystolic, whereas with the patient recumbent the only audible murmur is systolic.

In attempting to use exercise to study the value of murmurs in measuring the heart's capacity there is only one significant point, namely, the intensity of the murmur should be increased if the heart responds properly to a given exercise. The reason for this lies in the fact that the intensity of the murmur depends on the force with which the blood stream is driven by the muscle behind the lesion that causes the murmur, and a proper response to exercise is an increase in the force of the muscle.

The Condition of the Arteries.

In studying the problem of failing compensation in valvular disease any attempt at measuring the significance of the condition of the arteries is entirely guess-work.

To be sure we may believe that marked hardening of the vessels to some extent increases the work the heart has to do, and we may guess that in the presence of marked general sclerosis there is also sclerosis of the coronary vessels, and therefore a limited capacity of the heart to meet the demands made upon it, but this is entirely guess-work, and we must not lose sight of the fact that in senile or decrescent sclerosis there may be no change in the heart itself at all, despite the fact that all of the palpable vessels show marked hardening.

The Systolic and Diastolic Pressures.

I attempted to point out above that the first evidence we have of established compensation is a change in the size of the heart. Now the great value of estimating pressure lies in the fact that the most constant and reliable of all signs of cardiac hypertrophy is high systolic pressure. The systolic pressure is our most reliable method of measuring the working capacity of the heart muscle, and if other factors that regulate the pressure remain constant a falling systolic pressure means failing compensation. Of course it is probably true that a narrowing of your pulse pressure is of still more absolute significance.

Signs of Engorgement or Anemia.

In valvular disease a developing cerebral anemia, as indicated by vertigo, amnesia, and so forth, is of great significance. We may, for example, have an individual who is unable to walk from his home to his place of business and attend to his daily duties, but who can ride and easily do so.

It is unnecessary to do more than mention the significance of engorgements of the pulmonary or general circulation as indicated by rales at the base of the lung, chronic bronchitis, accumulations of fluid in the serous sacs, chronic digestive disturbances, edema of the ankles, or general anasarca.

Summary.

In studying the heart for failing compensation in valvular disease:

1. The most important observation relates to its size, which for practical purposes can usually be determined by a proper observation of the apex impulse.
2. The rate and rhythm are of especial significance in their relation to posture, exercise, habit and occupation, and must be recorded from studies of the heart itself, and not the pulse alone.
3. Of the two kinds of arrhythmia that of force is the more significant.
4. We must be careful not to overestimate the significance of murmurs. A systolic murmur frequently means nothing.

5. When all is said and done the final test of what a heart can do under given conditions is what it does do. Therefore, we should always measure the cardiac response to posture, exercise, habit, or environment.

CLEFT PALATE CONSIDERATIONS.

By James W. Gibbon, M.D., Charlotte, N. C.

In the earliest times obturators were used for the closure of clefts in the hard and soft palate, and it is stated that Greek physicians used these devices. But it is a historic fact that Ambroise Pare, Napoleon's surgeon-in-chief, described such a contrivance in 1541. Late into the nineteenth century artificial palates were made and used for these cases. Dieffenbach in 1834 reported first the operation for the cure of a cleft involving the hard and soft palate. It was done by raising muco-periosteal flaps through lateral incisions made close to the alveolar process. The edges of the cleft borders of these flaps were freshened and the flaps sutured together in the midline, practically the same as we do today. Baizeau in 1858, and von Langenbeck in 1861, soon followed with the same method, each claiming the originality. Von Langenbeck probably did more to popularize this operation and therefore today it bears his name. It is further interesting to note that J. Mason Warren, of Boston, in 1842 reported several cases operated on and cured by a somewhat similar method—the difference being that muco-periosteal flaps were raised and sutured in the midline without the use of the Dieffenbach lateral incisions. T. D. Mutter also in 1843 reported 21 operations on the hard and soft palate, done by the Warren method. Evidently both Warren and Mutter had used this plan before its publication in 1842. The original Warren operation is now used by a number of American surgeons. Dieffenbach's, under the name of the

von Langenbeck, operation is the one in more general use, and is most popular. Muco-periosteal flaps are raised through lateral incisions which are so placed as to avoid injury to important vessels and nerves, and which furnish the desired relaxation. The freshened margins of the flaps are sutured together in the midline.

It is thus interesting to observe that the most popular and the most successful operation, certainly in the general mass of all surgeons, is the original von Langenbeck operation, devised nearly a century ago. With possibly only slight modifications of technique it stands today as the most desirable method for these deformed patients.

There have however, been two noticeable divergencies from the use of this technique of recent years. The measures in each have been decidedly more radical, and have not—except in the hands of the originators—proven fortunate or satisfactory. Sir Arbuthnot Lane, in England, raises a muco-periosteal flap from one side of the cleft, leaving it attached at the cleft border—turns it hinge-like over the cleft, and sutures it beneath the flap of the opposite side. Blair, remarks that this, "the Lane operation is no more certain of success than the Warren or von Langenbeck when done at the proper age, and when failure follows the primary Lane operation, re-operation is much more difficult."

In 1861, Reeves, of Melbourne, while examining a dead infant that had a cleft palate, observed that most of the tissue that goes to make up the normal palate was present, and the width of the cleft actually depended upon the fact that the maxillary bones were spread apart. He suggested treating the deformity by approximating the separated maxillae. The operation for accomplishing this was later devised by Brophy, of Chicago. Taking advantage of the pliability of the bones of the face in infancy, Brophy forcefully closes the alveolar cleft, and narrows the palate cleft by transfixing the maxillae with wires, and twisting them over lead plates. Gradual tightening of the wires brings the maxillary

*Read at the Greenville meeting of the Tri-State Medical Association, Feb. 20-21, 1921.

bones closer together and consequently narrows the palate cleft. When this is narrow enough, the borders of mucoperiosteum are freshened and sutured in the midline. It is needless for me to say that Brophy himself has been eminently successful with this method, but it has not been satisfactory in the hands of the others. The most disastrous sloughing and failure may be the immediate outcome of this operation. Wiring the maxillae, according to Blair, may give most distressing late results as "distortion and lack of development in the upper jaw. The appearance of these patients when twelve or fifteen years, may cause the operator almost to regret that this particular child was not one of those infants the angels had chosen for their own."

It is a fact, therefore, that our present day success in palate surgery comes not from any recent alteration or radical differences in the technique as devised nearly one hundred years ago, but with our newer ideas of careful preparation of the patient (for the operation), and the adaptation of a suitable age. It is due very greatly to the inspiration and enthusiasm of Wolf in Germany, Lane in England, and Brophy in America, that surgery of cleft lip and palate has reached its present stage of general success. "They established the fact that the cleft palate should be closed before the age of two years. Then the length is usually not too disproportionate, and a good technical repair with subsequent training should give a fair approximation of average speech."

"While the possible ill results that may follow must necessarily lead to the ultimate discard of the more radical operations, it was these same operations that demonstrated that functional results will follow the early closure of the palate and this places their authors, along with Lemmonniere, Malgaigne, Husson, Mirault, Warren, and Dieffenbach as among the founders of modern palate and lip surgery."

In the repair of cleft palate there are certain general established principles which must be kept in mind. In the first place, the condition of the child

must be good, and severe cases should be under the care of a pediatrician for a period prior to the operation. The child should be gaining in weight, the hemoglobin should not be below 85 per cent, and the bowels should be regular. The determination of the size of the thymus gland is considered by some surgeons as important, since to operate in the presence of an enlarged thymus may result in the sudden death of an otherwise healthy infant. If enlarged, one x-ray exposure is thought sufficient to reduce it to normal size. If examination of the urine, etc., shows evidence of an acidosis, sodium bicarbonate is given in frequent small doses for several days before the operation. If care and thoughtful discrimination is exercised in the selection of the time of operation based on the condition of the infant, the mortality is not high, two or three per cent. It, therefore, is most essential that the surgeon insist upon the child's being in suitable health and nutrition, if his results are going to be good and the mortality rate low. These cases should all be in the hospital a few days before the operation is done.

In the embryo, it is to be recalled, union of the lip, alveolus, palate, and uvula proceeds from before backward. It is, therefore, growing increasingly popular to first close the lip before the third month, and then wait until the ninth or tenth month before closing the palate. By this method it has been found that often the bony parts will tend to correct themselves, and by the time the palate is to be repaired, the cleft will be narrower and the bones more closely approximated.

It is also true that at birth there is sufficient tissue present to form a normal palate if the parts be brought into apposition. As age advances, atrophy and secondary changes produced by the deformity diminish and weaken the amount of available tissue necessary for repair. A cleft which during infancy might have been repaired without difficulty will be found at the age of five years or older to present many obstacles. This alone is a factor arguing for the early operation.

With few exceptions all cases of congenital cleft palate can be closed by the original von Langenbeck operation. This at the present time may be modified to suit a given case, by doing it in two or more stages, or by the addition of some other means of retention such as tape, packing or plates to relieve tension. The applicability of a given case to any plan of operation is reached by the determination of the amount of available tissue for flaps. Naturally the higher the palatal arch, and the narrower the cleft, the more available tissue there is, and the easier is the cleft closed. In doubtful cases we measure the width of the arch from one lateral incision to the other, and compare this with the sum of the measurements from the lateral incisions to the cleft borders on the two sides. If the case is suited to a complete simple von Langenbeck suture, the results of the two measurements approximate within 10 mm. of each other. That is, the sum of the available mucoperiosteum on the two sides is equal to the width of the arch.

Even though the case is suited for a primary, simple suture after the von Langenbeck method it will often be found more satisfactory to close the palate in two steps. At the first operation the anterior half only being sutured, reserving the posterior half for a later date, after the anterior half has united. This method seems very reasonable, as less time is required for the operation, therefore less anesthetic and with less danger to the patient. Two stage operations are growing increasingly popular. Davis believes that it is always unwise to do a complete suture at one time.

In those cases of cleft palate in which the width of the arch is considerably out of proportion to the amount of available mucoperiosteal tissue, it can be seen that some additional feature must be added to the von Langenbeck in order to close the cleft. To simply raise flaps in these cases, and suture will result in successive failure because of unrelieved tension—there is not enough soft tissue present to do this with. This condition is usually seen in

cases of a wide, bilateral cleft, with possibly a low arch.

A popular operation for these cases is the so-called "Two-Stage Edge-to-Edge." At the first operation mucoperiosteal flaps are elevated through lateral incisions. The flaps are left attached at the cleft borders. The space thus made between the flaps and the bone is snugly packed with Iodoform gauze. After being left in place for about four days, the flaps separated at the cleft border, the edges pared and sutured with ease. By this method the flaps are stretched, and their length is very materially increased. The blood supply is increased, the flaps are thicker, and sloughing is very much less likely. It is remarkable how much the flaps can be lengthened by the pressure of the packing. The objection to this procedure is that, if for any reason the second operation cannot be performed within four days, the packing must be withdrawn. If allowed to stay in longer, there will be shrinking of the flaps.

Gordon B. New has recently suggested a technique of somewhat similar principle to be used in certain complicated cases. It is applicable when the primary operation has failed and the resulting scar tissue renders the ordinary von Langenbeck technique inadvisable, and also in other cases where the mucoperiosteum is lacking or very thin. These cases may be repaired by the use of a "Delayed Pedicle Flap." By this method flaps, with the pedicle posterior, are elevated through lateral incisions on either side of the anterior half of the palate and are then dropped back in place, and held with two or three sutures. The aponeurosis of the palate is not divided at this time. One week later the stitches are removed, the flaps again separated from the underlying bone, the edges are freshened and sutured in the midline. Union of the flaps obliterates the anterior one-half of the cleft. Three months later the posterior part of the palate is closed in an exactly similar manner, first raising the flaps, then suturing them back into position and finally at the end of a week freshening the edges and closing the

cleft. The advantage of this method is that during the week between the first operation, that is elevating the flaps, and the second operation—when the flaps are united, the blood supply is greatly increased, and the flap becomes thicker, and more capable of withstanding the strain of the sutures. New states that "the results of this method have been more satisfactory than those of any other so far tried, and while it does not make all cases of cleft palate operable, it has added to the operable group many which were not benefited by previous operative procedures."

While there are various other modified methods of repairing complicated cleft palates—for example, the use of the orthodontic apparatus, as devised by G. V. I. Brown, or the use of a free fascia transplant suggested by Brenizer—still what ever the individual peculiarity of technique, every successful operation must include certain specific factors of great importance. The first of these is the preservation of the blood supply. It is in making the lateral incisions that there is the greatest risk of impairing the blood supply. Dissections, therefore, must be carried out so as to avoid injury to the larger vessels. A knowledge of the course of these vessels is thus necessary to the surgeon. Nothing but failure follows injury to the blood supply of the flaps.

Another factor of very vital value to success is the division of the aponeurosis, at the junction of the hard and soft palates. This is necessary to obtain thorough relaxation and relief of tension on the sutures. When completely done it permits the flaps to fall towards each other in the midline. This must be completely accomplished if the desired effect is to be gained, and as a rule the division must be carried as far outward as the lateral incisions.

It is also important that the tissues at the junction of the hard and soft palates be kept as thick as possible in order to avoid subsequent perforation due to sloughing which often occurs at this point.

Relaxation or lateral incisions are generally necessary but when possible

it is well to avoid their use. The use or disuse of these must be a question of judgment on the part of the surgeon. It is these incisions which cause greatest danger to the blood supply and also must give rise to a certain amount of scarring. The best incision is described by Berry and Legg. This "begins a little in front of the junction of the hard and soft palate, near the alveolus, but internal to the posterior palatine foramen; it should extend obliquely backward to a point nearly half way between the posterior end of the alveolus, and the posterior margin of the soft palate, and should pierce the soft palate." If it is necessary to enlarge this incision, it is better done backward and outward than forward.

Suturing—There is danger in too many sutures. It is not necessary to try to make the line of closure perfect. The variety of the suture material depends on the operator—horse hair, silk, linen and silver wire. The sutures should be placed so as to approximate broad edges of the flaps without any tension.

The post-operative complications are not numerous. There may be some little vomiting as result of blood swallowed during the operation and the anesthetic. Commonly there is some temperature, 100 to 103. But this should subside in 48 hours. If it persists beyond this, it probably means that the flaps are sloughing. Middle ear infection must be remembered as a rarer complication causing persistent fever. Hemorrhage occurs, and sometimes packing must be used to control.

No. 819 Professional Building, Charlotte, N. C.

Discussion.

Dr. Southgate Leigh, Norfolk, Va.

I would simply like to call attention to the advantages of regional anesthesia in this operation in older children and in adults, and to mention a recent case in a child twelve years old in which I had practically perfect anesthesia in the palate. It really is an ideal anesthesia, and after a good deal of practice in dealing with younger children I believe it can be used.

"NEURECTOMIES (STOEFFEL OPERATION) IN THE TREATMENT OF SPASTIC PARALYSIS."

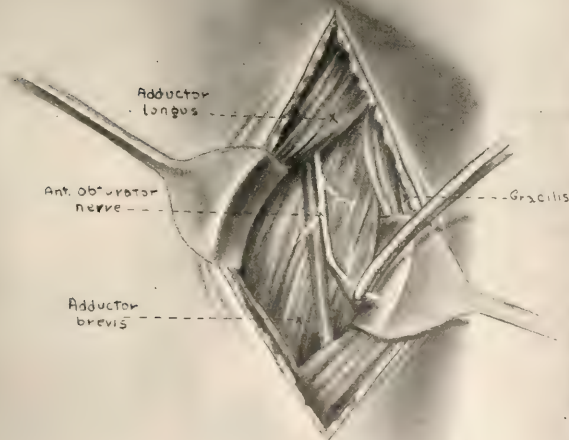
O. L. Miller, M.D., Charlotte, N. C.

The purpose of this paper is to make a preliminary report of work done in the treatment of spastic paralysis, by the use of the Stoeffel operation—neurectomy of motor nerves, or motor nerve bundles. Fifteen cases are re-

ported. Forty-six neurectomies have been done with twenty-one associated operations. The heel cord was lengthened in thirteen feet and the foot stabilized in six.

Spastic paralysis, with its associated and consequent disabilities constitutes one of the most discouraging problems in the treatment of cripples. The lesion manifests itself in pictures of physical incapacity ranging from a mildly crippled gait to complete helplessness; and mental states ranging from apparently normal minds to complete idiocy.

The pathology of this disease is not



Illustrating the exposure of the anterior oblique (motor nerve to the adductor longus, gracilis and sometimes adductor brevis) The nerve rests on the adductor brevis and beneath the adductor longus at this level.

definitely known but it is granted to be some disturbance and impairment of the cerebral nerve tissue. In some cases the lesions can be localized. The lesions are divided by Dowman into: (1) The pyramidal tract lesions. (2) The extra pyramidal tract lesions. (3) The mixed and extra pyramidal tract lesions combined. Clinically this means that certain cases show some co-ordination in muscle groups along the extremities but the muscle groups receive unequal charges of motor nerve impulses, and are unequally balanced in strength. Cases of the first type are more amenable to the treatment offer-

ed by the Stoeffel operation. Cases of the second type are of more complex pathological origin, and cannot be benefited by operations on the peripheral nerves. Cases in the third type are generally unfavorable surgical risks, and their mental impairment makes them poor subjects for after training.

The probable etiology:

Hydrocephalus

Microcephalus

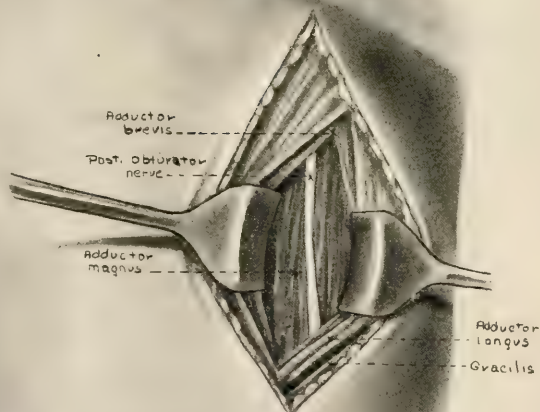
Syphilis

Poor health in the mother

Trauma to mother with child

Eclampsia

Birth injury



Illustrating the exposure of the posterior obturator (motor nerve to the adductor magnus beneath the adductor brevis and much deeper than the anterior obturator.

Marasmatic condition.

Meningeal hemorrhage

Softening or sclerosis of brain

Encephalitis, usually associated with some infectious disease.

Occasion should be taken to emphasize the work of the neurological men and pediatricians, who are calling for more care and co-operation in effort to get universal recognition and treatment of intra-cranial hemorrhage of the new born.

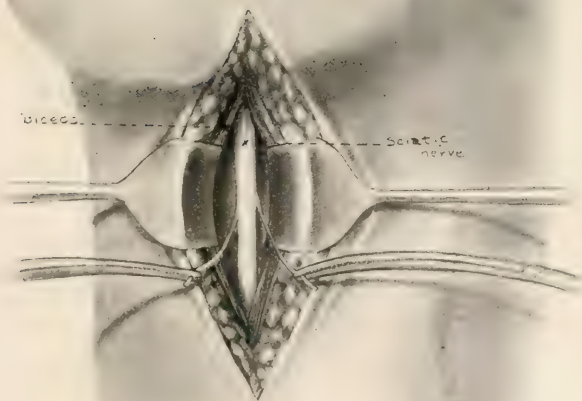
Four clinical types are recognized. The mental impairment usually is in proportion to the extent of the spasticity.

1. Spastic diplegia, involving both upper and lower extremities. In this class the most marked mental cases are seen.

2. Spastic paraplegia, or involvement of the lower extremities. Here the mental impairment, as a rule is less.

3. Spastic Hemiplegia. The lesion involves one side and the mentality is generally good.

4. Spastic monoplegia usually follows a post-natal encephalitis, associated with some of the infectious diseases and mental impairment is rarely seen.



Illustrating the exposure of the branches of the sciatic to the hamstrings (motor nerves to the biceps, semimembranosus and semi-tendinosus).

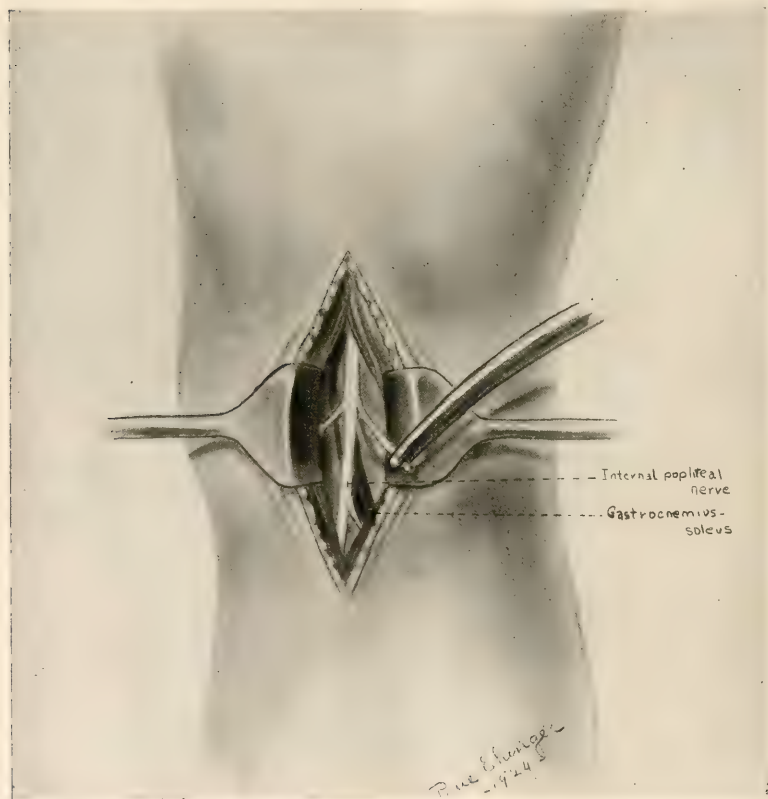
It is generally conceded that operation on the brain itself in the established spastic paralysis has not been helpful. In view of this, both neurological and orthopaedic surgeons have been endeavoring to develop some type of treatment offering encouragement to this great group of defectives.

Children who have a mild type of spastic paralysis, if taken early and put into the hands of a competent teacher and physical educational worker, can be trained to overcome much of their disability. The majority of cases, though, are so crippled and ungainly that more heroic measures must be sought to give them relief.

The cycles of treatment these cases have gone through, bibliographically speaking are.

1. Tenotomies
2. Tendon Transplantation
3. Resection of the posterior nerve roots of the spinal cord
4. Cranial decompression
5. Temporary paralysis by alcohol injection of nerves
6. Partial resection of motor nerves by Stoeffel.

Tenotomies have not been satisfying, as the gap in the tendon and muscle fill in after a time and the contracture continues. Tendon transplantations are rather large operations, have their



Illustrating the exposure of the internal popliteal nerve with the motor branches to the two heads of the gastrocnemius and the soleus muscles.



Case I—T. S.
Paraplegic. Spastic adductors, hamstrings
and heel cords.



Case I—T. S.

After sectioning the anterior and posterior obturator nerves, branches of the sciatic to the biceps and semi-membranosus and branches of the internal popliteal to gastrocnemius soleus both legs. The heel cords were also tenotomized.



Case II—E. F. W.
Spastic paraplegic. Showing how the spastic hamstrings overbalance the quadriceps, giving this ungainly posture. The heel cords were lengthened in early childhood.



Case II—E. F. W.

After neurectomy of the sciatic branches to the hamstrings, the anterior and posterior thigh muscles strike a balance.



Case III—W. M.

Spastic hemiplegic, Rt. Note the adductor and flexor spasm at the knee and the spasticity and contracture of the heel cord.



Case III—W. M.

Following neurectomy of the anterior and posterior obturator, sciatic branches to the hamstrings, and the branches of the internal popliteal to the gastrocnemius soleus. The heel cord was lengthened and the foot stabilized.



Case VI.—E. W.

Spastic Monoplegia. Case of chronic spasm of the flexors of the fingers and pronators of the forearm.

Case VI.—E. W.

After neurectomy of a portion of the bundles in the Median nerve.

place, but one is fortunate to be able to avoid them in this disease. None of the procedures down to the Stoeffel operation have met with sufficient success to perpetuate their use. With the former operations children get little improvement and discouraging relapse. The Cranial decompression has been well tried out by Sharpe and abandoned in these chronic cases.

The aim of the operation being described is to cut off heavy loaded nerve impulses passing over the motor nerves to the involved muscles, or to so weaken the pathway of these impulses that they do not get through in such irritating charges. It is necessary to know the muscles making up the spastic groups, their nerve supply and the most accessible anatomical location of the motor nerves. Only study of the muscle balance, and clinical experience, will

guide one in determining to what extent one can go in intentionally crippling a spastic muscle or group of muscles, by neurectomy. The theory is to weaken the spastic muscles until an equilibrium is obtained between normally opposing groups.

The Stoeffel operation appeals to one because of its simplicity, its freedom from surgical shock, its physiological reasonableness, and its practical results.

We have operated, with improvement, on the median, sciatic, obturator, and internal popliteal nerves. The cuts accompanying illustrate the approach.

If a child falls neurologically in the right type and has a fair to normal mentality it deserves this treatment.



Case IV.—J. S.
Spastic Hemiplegia with marked contractures
and an irritative central lesion.



Case IV.—J. S.
After correction. Neurectomies on the obturators and sciatic. Soutter's operation for hip flexion, and tenotomy of the hamstrings and heel cord.

After the operation on the nerves, frequently, the heelcord has to be lengthened for atrophic shortening and a foot stabilization done to hold the feet well corrected.

Good after training in the hands of a capable physical education worker is necessary, as many of the cases are slow mentally and they need careful handling to get their maximum improvement.



Case V.—N. C. W.

Spastic hemiplegia. Adduction and flexion deformity at the knee. Heel cord contraction.

Discussion.

Dr. Wm. P. Cornell, Columbia, S. C.

I would like to make one comment from the pediatrician's standpoint. To prevent these deformities, keep a close eye on the infant during the first week or ten days. Watch for drowsiness and refusal to nurse. With these two symptoms, with nothing else like bulging of the fontanel, etc., tap the spinal cord and see if bloody fluid is present. With repeated tapings Dr. William Sharpe (?), of New York, and Dr. Sidbury, of Wilmington, have carried some of these cases through without any deformity.



Case V.—N. C. W.

Following Stoeffel on the adductors of the thigh, flexors of the knee, heel cord tenotomy, foot stabilization.

Dr. Tom Williams, Washington, D. C.

As to the neurological aspects of this, the operation of cutting the posterior hamstrings is of very doubtful use. In this operation, which is a very sound one so far as it goes, it reproduces the condition of poliomyelitis. The patient is no worse off than he has been; he gets a fair use of the legs. In cases of the mild kind, like the two boys we have just seen, they have some use of the legs. Dr. Miller performs three operations, incomplete paralysis of the obturator; then of the hamstrings by cutting the branch of the hamstring from the sciatic; then he makes a separate incision down below in the popliteal space. Now, we know that these nerves are in a bundle in the sciatic, and it would be very easy to get to them there. ———, in France worked out a technic for separating the bundles while in the nerve. I want to ask Dr. Miller if he could not perhaps do that—make only an incision into the sciatic region, expose the sciatic, find the nerves going to the respective mus-

cles he wishes to atrophy by electrical stimulation, and thus prevent the deformation of the scar in the popliteal region.

the productiveness of his University, if he includes me in that group. Nevertheless, I am very happy to have further reports from him.

Dr. James K. Hall, Richmond, Va.

Dr. Miller, closing the discussion:

Almost five thousand years ago Job asked, "If a man die, shall he live again?" His question remains, so far as the individual is concerned, unanswered. In my boyhood days in North Carolina people were asking, "Can a state that is almost asleep live again?" That question has been answered. The latent resources of that state, of all kinds, the powers of that state, that remained for so many generations impotent and useless, are being set loose for the relief of mankind. I see before me this afternoon three, at least, of the outstanding great conservators of that state. I see the superintendent of a great state hospital, who is conserving the mentally disordered of that state; I see the president of the great university of that state, whom North Carolina went away up to Yankee New England to bring down; I see Dr. Miller, whom the state of North Carolina went down to Georgia to capture and brought up to help these little children. If he had been living in the time of David and Saul I have no doubt that he would have occupied a very prominent place in ancient Hebrew history; I have no doubt that he would have operated on crippled Mephobosheth and relieved him.

Mr. President, I wish to introduce my friend, Dr. C. M. Byrnes, who came from the delta of the Mississippi. He is now teaching in Hopkins, and if Dr. Tucker and Dr. Williams were not before me I would feel like saying that he is the biggest neurologist in this country. He will discuss not only Dr. Miller's presentation, but later he will tell us about something which even Dr. Tom Williams does not know (and I think Dr. Williams knows almost everything in the world)—that is, paralysis agitans.

Dr. C. M. Byrnes, Baltimore, Md.

I am sure Dr. Hall has overestimated

I want to answer Dr. Williams' question by saying that it is a great deal simpler to define the branches after they separate than to define them in the bundle itself, and there is much less risk of injury to the nerve. Either one of the operations should be done in five or six minutes.

DANGEROUS HEMORRHAGE FROM HYPERPLASTIC ENDOMETRITIS WITH REPORT OF A CASE.

By Robert T. Ferguson, M.D., F.A.C.S.,
Charlotte, N. C.

Hemorrhage from the uterus is a subject that is as old as medicine and surgery itself, and hemorrhage from hyperplastic endometritis is also hoary with age, but hemorrhage from hyperplastic endometritis in young girls, while known for a long time, has found very little discussion in the literature until recent years, and then only in sporadic attempts to explain its cause and expound methods of treatment with the hope of cure. It is worthy of note that hemorrhage from this condition usually occurs either at puberty or around the menopause. As to its etiology very little is definitely known, but taking into consideration all the theories and facts ascertainable up to the present time it would appear that it has an endocrine origin. The histologic picture of these cases which is characteristic of hyperplasia of the endometrium is described by some as of inflammatory origin, but the facts do not justify such belief. Certainly in young girls at the time of puberty who are virgins, and who have never had any local infections, there is little chance to demonstrate or prove an inflammatory origin to these cases.

We know that the ovary is a true organ of internal secretion and this has been proven by substantial evidence gained from observations made after removal, and from transplantation of ovarian tissue, and also by the effects of the injection of ovarian substance into the tissues. We also know that castration before sexual maturity causes failure in genital development, while in adult life it produces immediate regressive changes in the uterus, vagina, and external genitals, manifested by well marked atrophy of the parts. We are indebted to Graves and Halban and others for much knowledge along this line. We have learned by animal transplantation that much of this genital atrophy can be prevented after castration by transplanting the extirpated ovary in other parts of the body, and if this operation is done on animals while young the other genital organs may show normal development. We do not know definitely the origin of the ovarian secretion but we are sure that the graafian follicle and the corpus luteum are the main producers.

In searching the literature we find very little about abnormal hemorrhage in young girls, but we are indebted to McDonald¹, Novak², and Geist³, for valuable information on this subject. Novak says that hyperplasia with excessive menstruation sometimes occurs in very young persons in whom the possibility of an inflammatory etiology may reasonably well be worked out. He also says that the occurrence of hyperplasia in these very young patients, together with the frequent presence in such cases of other endocrinopathic stigmas, points to a probable endocrine origin. In this connection he reports a case in a girl twelve year of age who had profuse uterine bleeding for three months. It is on account of the comparative infrequency of this condition in young girls, and on account of the severity of the hemorrhage which sometime occurs, that I have decided to report the following case:

Miss L. C., age 13 1-2 years, single. Referred by Dr. R. Z. Querry.

Family history, entirely negative.

Personal history: Patient is well developed, probably overdeveloped for her age, weighs 140 pounds and is the only girl in a large family of children. Menstruation appeared for the first time at twelve years of age and she flowed excessively for ten days. Following this she menstruated regularly every two weeks, which lasted from a week to ten days and always excessive. Her mother paid little attention to the extended flow at this time as this was her only daughter and she said she did not know much about such things. Her mother also relates the fact that when the child was three days old she had a bloody vaginal discharge which lasted one day and caused her considerable concern at that time but that she had forgotten about it until the present trouble came about. She has never suffered from dysmenorrhea and has really had no pain at her periods worth mentioning. In June, 1923, her period did not cease as usual and she continued to flow until July 16th, when she was curetted by another surgeon. Following this she saw only a stain for about six weeks when she began flooding again and the hemorrhage was continuous until Dec. 3rd, when I was called in consultation.

She had always been strong and healthy previously and was very robust, much stouter than the average girl at her age, and took part in all the athletic stunts with her brothers. She had never been sick enough to call a physician prior to this trouble except when she broke her arm at six years of age.

Heart: there are no murmurs and the heart appears normal in size and position. Blood Pres. 110 and 55; Temp. 99; Pulse 108; Resp. 28.

Lungs: The lungs are normal and the chest is well filled out.

Thyroid gland is not enlarged.

Tonsils: when I saw her and during the time she was under treatment her tonsils were about normal in size but on Feb. 16, 1924, her tonsils are very much enlarged and I have advised tonsillectomy in the early future.

Teeth and gums in excellent condition.

Skin and mucous membranes: very anaemic from loss of blood.

Breasts: normal and well developed, normal in appearance and show no atypical overgrowth. No evidence of malignant spots, no tumors, no scars, no lymphangiosis.

Abdomen: the abdomen is negative, pical overgrowth. No evidence of malignant spots, no tumors, no scars, no lymphangiosis.

These same specimens were sent to

Vaginal examination: the hymen is stretched probably from her former curettement; the vagina is normal in appearance; the cervix is considerably enlarged and shows a stellate laceration which was doubtless due to her former dilatation. The cervix is also very hard. The uterus is slightly enlarged and in good position; adnexa apparently normal.

Kidneys: not palpable and no tenderness over either.

Liver: normal as to size and position.
Genito-urinary tract: negative.

Nervous system: normal.

Sight and hearing: normal.

Urinalysis: negative, bo

and microscopically.

Blood: Leukocytes 5,200; erythrocytes 2,128,000; Haemoglobin 45 per cent; lymphocytes 18; Polys. 81; Eosinophiles 1.

Sputum and feces not examined.

On Dec. 3, 1923, the patient was g

a quarter grain of morphine and a specimen of tissue taken from the cervix and the uterus curetted removing a handful of soft friable tissue. The cervix was very hard and enlarged and the os was sufficiently large to admit the curet without dilating. No history of pregnancy could be obtained nor was such tenable. The specimen curetted in July 1923, was examined by Dr. H. P. Barrett of Charlotte and he tells me that no sign of malignancy was present and that no chorionic villi or decidua cells were demonstrable at this time, ruling out the possibility of pregnancy. The specimens I obtained were also examined by Dr. Barrett with the following report:

Section from cervix and uterine scrapings.

"(1) Section from cervix shows normal vaginal epithelium and no evidence of malignancy.

"(2) Sections from scrapings show increase in both the interstitial and glandular tissue of the uterine mucous membrane. The glandular acini are

These same specimens were sent to Dr. Joseph C. Bloodgood of Baltimore with the consent of Dr. Barrett, and Dr. Bloodgood after completing his examination turned them over to the pathological laboratory of the gynecological and obstetrical department of Johns Hopkins Hospital and the reports of both are appended:

Dr. Bloodgood's report:

"Microscopic section (1)—from the cervix shows normal connective tissue with here and there a gland or group of glands but no epithelial lining. Now I see a little area of epithelial lining.

"Section (2)—from the body of the uterus—curetting—shows no evidence of cancer. Glands little hyperthrophied. Stroma between glands very rich in cells of the lymphoid type. Some hemorrhage. As a rule the gland linings have a single layer of columnar cells. Very little papillary cyst adenoma. There is nothing like chorionic villi or decidua cells to explain pregnancy. Dr. Barrett reported scrapings no evidence of malignancy. I agree with him. Also he reported section from cervix no malignancy. I agree with him. This is, of course, some type of hyperthrophy of the endometrium."

Report of Dr. George H. Gardner,
Gynecological Department Johns Hop-
kins Hospital;

"(1) The section of the cervix is perfectly normal tissue, no evidence of malignancy or of infection.

“(2) The sections of the endometrium are perfectly typical hyperplasia. The characteristic things are (a) just variation in the size of the gland. The huge ones are visible to the naked eye, and are absolutely abnormal but characteristic of hyperplasia. (b) The stroma is quite compact and cellular while some of the cells show nuclear figures. (c) The general pattern of the uterine glands is not that seen in any phase of the normal menstrual cycle. As to treatment repeated curettage to control bleeding is indicated. Radium may be indicated in small amounts—hyster-

ectomy only as a last resort. The secondary anemia should be treated as is customary, after treating the primary cause, namely the hyperplasia of the endometrium."

In outlining my expected plan of treatment to Dr. Bloodgood and asking for suggestions he had the following to say: "I can see no indication for hysterectomy except inability to check hemorrhage or increase in symptoms of anemia. In view of the low blood count and in view of the hemorrhage we must bear in mind the possibility of hemophilia and scurvy. I would advise a most careful checking up of the blood and transfusion. The objection to X-ray is that it does not check hemorrhage but checks the menstrual blood, and this should not be done in a girl age thirteen unless to save her life."

Treatment: Before I was called into the case the patient had been given a series of X-ray exposures by Drs. Laferty and Phillips of Charlotte. She was given about two-thirds of a castration dose in four exposures over a period of about six weeks from Oct. 11, 1923, to Nov. 22, 1923, but without effect so far as the hemorrhage was concerned.

Following the curettement I made on Dec. 3rd patient remained in the hospital two weeks after which she was permitted to go home and continue in bed for two weeks longer, being allowed to sit up one hour morning and afternoon during the last two weeks. During the first ten days she got two intravenous injections of iron and arsenic and a second blood count was made on Dec. 14th, which showed an increase in the red cell count to 2,550,000 and she was visibly improved. On the afternoon of the same day she got a transfusion of 500 c.c. of blood from one of her brothers and had the usual chill a few hours later with a rise in temperature for a short period to 102.3-5, after which it dropped to normal and continued so. After the curettement on Dec. 3rd, there was no further hemorrhage until Dec. 28th, when she noticed a little brown stain and the following day she was menstruating excessively. I had

her brought immediately to the hospital and another curettement was done under morphine which very promptly checked the hemorrhage. Following this there was no further bleeding until Jan. 28th, when she had a normal menstrual period which lasted four days and which was not severe enough to cause her to go to bed. She has had no further trouble up to the present time. Last Saturday, Feb. 16th, I had her come to my office for a check-up and her blood count at that time was: reds 4,100,000; whites 7,300; haemoglobin 70 per cent, and she looks the picture of health, weighs 151 pounds and is very happy.

I had mapped out a line of treatment to be followed in case the hemorrhage could not be checked about as follows: to continue the curettements and do the blood transfusion first, later, if these were not successful, to try a small amount of radium, failing in this I would do a partial resection of both ovaries and a hysterectomy as a last resort.

I wish to acknowledge valuable assistance from Dr. A. G. Brenizer of Charlotte in giving the blood transfusion and to Drs. Bloodgood and Gardner of Baltimore for suggestions as to treatment.

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COMPARATIVE VALUE OF SPECIFIC GRAVITY AND 'PHTHALEIN EXCRETION AS TESTS OF DIFFERENTIAL KIDNEY FUNCTION.

L. C. Todd, M.D., and A. J. Crowell, M.D.,
Charlotte, N. C.

The simplicity of any diagnostic procedure should always be a strong argument in its favor provided this procedure gives as much and as accurate information as some of the more elaborate

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methods. Some of our present day teachers of clinical medicine and physical diagnosis are already criticizing the present day diagnostic methods as being so elaborate, so technical and thought-consuming, that our students of today are neglecting the fundamental training that may be secured by well-known methods of inspection, palpation, percussion and auscultation. The advice of these teachers is already being heeded and there is beginning to be a rational return to the training of students in the ability to perform a thorough physical examination placing greatest dependence upon the unaided senses.

In several of the specialties there may have been some "ultra-scientific" tendency although here, perhaps, if anywhere, the finer diagnostic details are warranted. However, if any thing can be done as well and as promptly by two distinct methods, the simpler of the two should have preference.

It is our chief object at this time to re-emphasize the value of the specific gravity of the urine as a renal function test and to compare it closely under parallel conditions with the more elaborate phenolsulphonephthalein excretion test.

In recent years much dependence has come to be placed in the test of kidney function in which phenolsulphonephthalein is the indicator dye. This test came to be used first by the internists as a means of estimating total kidney function. Later the urologists began using it in comparative tests on the two kidneys—as a differential test of kidney function. It has established itself as a very valuable means of estimating renal activity because it seems evident that the excretion of this dye proceeds parallel with the excretion of nitrogenous waste products. Even if incipient impairment of the excretory function of the kidney be present, it may be reflected by the diminution in the dye output, and the determination of this latter may give an accurate quantitative estimate of the existing functional activity of the kidneys. For this reason the urologist has found comparison of the 'phthalein output from the two kidneys sep-

arated by ureteral catheterization as being of essential value in determining which is the damaged kidney and to what extent it may be damaged. As long as there is one kidney functionally active, there will be no striking evidence of a reduced renal function found in the chemistry of the blood. But when urinalysis points to a renal injury or infection or the radiograph shows evidence of renal disease, we have heretofore placed great emphasis upon the differential renal function tests.

The technic of performing the differential 'phthalein excretion test at our clinic, which does not differ widely from the methods used in other places, is as follows:

With both catheters fitting snugly in situ a specimen of urine is collected from either kidney which specimens are used for microscopic, chemical and bacteriological examination. At this time sufficient urine is collected from either side for the determination of specific gravity. (We will have occasion to invite your attention to this particular detail a little later.) A glass of water is given the patient to promote diuresis and then an intravenous injection of 6 mg. of the dye is given. Here the time is noted and again as the dye first shows in the urine coming from either side as it drains into NaOH solution in the collecting tubes. This is the appearance time and is recorded for the two separate sides. The excretion from either kidney is collected for a period of fifteen minutes following the appearance time. With these fifteen minute specimens, the total fluid output, the total dye excretion and, by computing, the dye concentration is determined for the two kidneys separately. All of these determinations are of importance but we have come to regard the dye concentration as of most importance.

This differential renal function test as indicated by the 'phthalein excretion gives us certain definite information. There are certain drawbacks and sources of error. The time for collecting the specimens is long and is a severe trial to certain classes of patients. Frequent-

ly the catheters do not fit tightly and a considerable portion of the dye-containing urine finds its way into the bladder.

In the fall of 1922 at the meeting of the American College of Surgeons, Fullerton called attention to what he termed "unilateral diuresis" and he established the importance of diminished specific gravity of the urine from the affected side as a sign of unilateral disease of the kidney or disturbance of its function. Shortly prior to this time we had begun making a comparison of the differential specific gravities with the differential 'phthalein excretions with the object of determining to what extent the one functional test might substantiate the other. We have now made these comparative determinations in nearly one hundred cases and are prepared to state that in our experience, the comparison of the specific gravities of the urine from the two sides gives as good an estimate of the comparative functional activity of the kidney as does the more elaborate and more time consuming differential 'phthalein test.

The object of our paper then is to bring the value of this simple test to your attention and in this way we are reactionary to a certain degree because we feel that as much information can be gained by this well-known simpler procedure while at the same time less time is consumed by the urologist and the period of the patient's pain or at least discomfort is materially shortened. It is well to have both determinations as checks one on the other but if only one test is used, the comparative specific gravity test is preferable.

The technic is simple. As soon as the ureteral catheters are in place and functioning properly, a specimen of urine can be collected from either side and the specific gravity determined on the separate samples. A comparison gives the desired information. Equal specific gravities indicates equally-shared functional activity while a disparity between the two gravities gives a rough quantitative estimate of the difference between the activities of the two kidneys—a low-

ered specific gravity indicating a lowered function. The question arises as to the amount of urine to collect. Very rarely is it not easily possible to collect as much as 3 c.c. from each kidney in 5 to 10 minutes time and 3 c.c. is sufficient for the rapid determination by the Saxe urinopycnometer which I will show later. This is accurate to the third decimal place. If only 1 c.c. can be collected, the gravity may be determined by actual weighing to the nearest milligram in a 1 c.c. Gay-Lussac specific gravity bottle on an accurate balance. If only a drop or two of urine can be obtained, the gravity may be determined by suspending the drop in a mixture of chloroform and benzol and then with a regular urinometer taking the specific gravity of the mixture necessary to suspend the drop. These last two methods are accurate but slow. For practical purposes the urinopycnometer will be found preferable and for this 3 c.c. of the urine will be needed.

In our 95 cases, we have been able to collect the urine samples just preceding the intravenous administration of the 'phthalein for the dye excretion test. We have had opportunity to make the comparison between the two methods in renal tuberculosis, hypernephroma, renal and ureteral calculi, pyelitis, pyelonephritis, nephritis, hydronephrosis, nephroptosis, and various other urological condition as well as a large group of cases that were urologically negative and in which no other diagnosis was made. In all cases except four, the two tests ran parallel. In these four cases there was a deviation in the dye output from one kidney but in all of the four a large amount of dye had leaked around the catheter into the bladder, thus laying this determination open to question.

We will demonstrate in tabulated form a few typical findings in certain cases illustrative of some of the various groups.—Table 1.

Table 2 gives a resume of all the cases in which we have had the opportunity of making the two tests coincidentally.

TABLE 1

Case No.	Clinical Diagnosis	Ureteral Urine	Functional Tests			Dye Conc.	S. G.
			App. Time	CC Urine	% Dye		
7641	Cystitis, Bilateral Pyelitis	R. Pus cells numerous L. Pus cells numerous	7 7	7 6	3 2½	0.42 0.42	1.008 1.008
8189	Pyohydronephrosis Lt.	R. No pus L. Pus cells numerous	10 10	3 30	6 2	2.00 .066	1.034 1.009
5031	Renal Calculi, Rt.	R. Few pus cells & bac. L. No pus	3 3	9 4	10 9	1.10 2.25	1.022 1.035
8356	Ureteral Calculus, Lt.	R. No pus L. No pus	4 5	3½ 4	7 3½	2.00 .87	1.023 1.017
9655	Renal Tuberculosis, Lt.	R. Negative L. pus and bacilli extremely abundant	5 8	2 49	3 4	1.50 .08	1.024 1.022
9406	Hypernephroma Lt.	R. No pus L. No pus	12 None	3 1½	6 -	2.00 -	1.022 1.006
9954	Abdominal Tumor Operation—Carcinoma of liver	R. No pus L. No pus	4 4	11½ 9	16 12	1.38 1.33	1.018 1.018
8792	Chronic Nephritis	R. Albumen, casts, pus and bacilli L. Albumen, casts, pus and bacilli	10 15	18 5	trace trace	--- ---	1.004 1.003
8282	Pyelonephritis, Lt.	R. Negative L. Albumen, numrs. casts	4 9	7 5	12 5	1.71 1.00	1.028 1.013

Comparison of Differential Renal Function Tests in Typical Cases.

TABLE 2

Diagnosis	No. Cases	Both Tests Parallel	Disagreement	No. of Cases No Functional Change
Urological Negative	20	19	1	17
Calculus, Unilateral	15	15	0	3
Calculus, Bilateral	4	3	1	0
Pyelitis, Unilateral	5	5	0	2
Pyelitis, Bilateral	4	4	0	2
Cystitis	8	8	0	6
Nephritis	7	7	0	0
Hydronephrosis	5	5	0	2
Pyelonephritis	3	3	0	0
Hematuria, Unilateral				
Cause	3	2	1	1
Pyelitis of Pregnancy	2	2	0	2
Hypernephroma	2	2	0	0
Appendicitis	2	2	0	1
Cholelithiasis	2	2	0	2
Renal Tuberculosis	2	2	0	0
Nephroptosis	2	1	1	1
Miscellaneous	9	9	0	8
	95	91	4	47

TABLE 2

Summary of all cases in which the two Renal Function Tests were done coincidentally.

Conclusions.

1. Comparative differential specific gravity and phthalein tests have been performed in 95 cases.

2. The two tests as indicators of func-

tional activity were seen to run closely parallel.

3. The simpler specific gravity test is preferable because it is less trying upon the patient, is time-saving to the urologist and gives as much information as the more elaborate and time-consuming tests.

Discussion.

Dr. T. M. Davis, Greenville, S. C.

I wish to thank Dr. Todd for his paper. This test certainly does appear very simple, and I am sure we all appreciate his bringing it before this meeting. There is one question I want to ask Dr. Todd. Quite often, in ureteral catheterization, there is blood. Of course, blood has a higher specific gravity than urine, and I would like to ask what effect that has on the test.

Dr. L. A. Crowell, Lincolnton, N. C.

I am glad to know that we are coming back to the simple means of making the diagnosis. We often forget that we have eyes and hands, and I am glad to see that we are coming back to the basic principles. We have been going too far afield; we do not know where we are; we do not study the patient. We see the urine and blood and make X-ray ex-

aminations, etc., but we forget that we have eyes, ears, and common sense.

Dr. Gideon Timberlake, Baltimore, Md.

This paper of Dr. Todd's and Dr. Crowell's stresses the value of simplicity. This specific gravity test simplifies matters and does away with a lot of pictures. In simplicity lies the greatest possible force, and I feel very grateful to Dr. Crowell and Dr. Todd for this contribution.

THE ROENTGEN RAY IN THE TREATMENT OF HYPERTROPHY OF THE PROSTATE.

By Fred M. Hodges, M.D., Richmond, Va.

In patients who are good surgical risks and where the symptoms are marked as, for instance, retention or very frequent urination with marked straining and pain, surgery is unquestionably the method of choice in the treatment of this condition. Where the pre and post-operative care is well carried out the mortality is fairly low and the result excellent. The mortality in selected cases is usually given as around three and a half to seven per cent. The mortality seems to vary greatly in different clinics. Young, in more than a thousand cases, reports three and a half per cent mortality. Barney, in two hundred and fifty cases, eighteen per cent. Carisi reports a general mortality of fifteen per cent. Between forty-five and sixty-five per cent are cured.

This paper will deal almost entirely with two types of cases, neither of which comes under the above classification; that is, distinct enlargement of the gland with severe clinical symptoms in patients who are good surgical risks. Those treated by us fall almost entirely into two groups: (1) where there is an enlarged gland with increasing urinary symptoms but no actual retention and slight residual urine, and (2) where there are varying degrees of enlargement of the gland and clinical symptoms, but where the patient is a poor surgical risk.

The following case illustrates the first type: Mr. E., age 63. Complained of a constant desire to urinate and very frequent urination. For some time he had been unable to empty the bladder satisfactorily. The prostate was very much enlarged, fairly hard, and tender. There were five ounces of residual urine. This patient was given several series of treatments, the X-ray being administered through the back, abdomen, and perineum. Six months after the first treatment the prostate was almost normal in size. The frequent desire to void had left him. There was practically no residual urine. This man's general condition has improved wonderfully. In this case the patient's usual occupation was continued. There was no pain or risk to life, and we feel sure that his condition has been entirely relieved.

In the second type, or where there are varying degrees of enlargement of the gland with varying clinical symptoms, but the patient is a very poor surgical risk, the following case is illustrative: Mr. G., age 66. Was troubled with a frequent desire to urinate and inability to satisfactorily empty the bladder for several months. Entered Stuart Circle Hospital June 14, 1923, with retention of urine. A complete examination showed that he had a very large prostate, a distended bladder, pus and albumin in urine, and diabetes. He was in the hospital for several weeks, during which time he had to be catheterized one or more times in the twenty-four hours. He did not improve enough for Dr. Geisinger to consider him a safe surgical risk and was given three X-ray treatments through the perineum. A special apparatus with the tube beneath a form of chair with a hole in the top was used. This enabled us to get a full dose of the X-ray into the prostate. The perineum was fully exposed to the ray from a tube ten inches beneath the seat of the chair. Five milliamperes, ten inch gap, seven minutes, with nine millimeters aluminum was used. Two-thirds of an erythema dose over the lower abdomen and back of the patient, using two hundred thousand volts, fifty centimeters distance, three-quarters

millimeter copper filter, was given. A few days after the first treatment he began to void without the use of a catheter and has not used one since. He has been having practically no trouble since a month after the first treatment. An examination made by Dr. Geisinger two months after the treatment showed the prostate reduced to one-third of its former size, with practically no pus in the urine. At this time eight months after treatment he is symptom free.

No one would expect such spectacular results in every case. In a good many patients where complete retention was relieved, where the prostate decreased markedly in size and where the patient's general condition and the infection improved a great deal, we could not entirely relieve the residual urine. If any of these patients have to have a prostatectomy later they are certainly far better surgical risks than they were before the X-ray treatments were given. There is no increased difficulty in the surgical removal following the use of the X-ray.

Merrit, Stern, Giles and Thomas, Stephens, Phillips, and others who have had experience in radiation therapy of hypertrophied prostates, all report excellent results in a large percentage of the cases.

The pathology usually found in hypertrophy of the prostate is a true hyperplasia of the glandular structure. Such embryonal type tissues are specially sensitive to the X-ray and in this type extremely few operations will be necessary following radiation therapy. Prostates showing much fibrosis do not respond so well, but even in these some good results are obtained. Myomas of the prostate and cystic tumors do not respond favorably to radiation therapy. They, however, represent a small percentage of cases, and surgery is still available. No matter what the type, no case has gotten clinically worse during the treatment. A couple of days following the treatment there is a definite swelling of the gland with an exacerbation of symptoms, but invariably this stage has been followed by improvement.

We have not treated a sufficiently

large series over a long enough period to give any definite conclusions. We believe that in good surgical risks who have definite symptoms and pathology, surgery is certainly indicated. We also believe that a large percentage of the early cases can be permanently relieved of all symptoms and that some of the very serious ones can be entirely relieved by radiation therapy. Others are partially relieved and nearly all can be made better surgical risks.

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Discussion.

Dr. A. L. Gray, Richmond, Va.

I think I would divide up these cases of enlarged prostate just as Dr. Hodges has done, into two classes: First, one in which the patient does not seem to be in quite bad enough condition to require a surgical operation so extensive as a prostatectomy; second, where surgery is contraindicated on account of the bad condition of the patient. There is unquestionably a field for Roentgen ray therapy in both of these conditions. I have in mind a physician in active practice in a neighboring town who came to me some four months ago complaining that he had a slight enlargement in his prostate irritation, nocturnal micturition requiring him to get up from four to six times during the night, and frequent urination during the day. After three treatments he is now never getting up more than once at night and frequently not at all, and he has been constantly attending to a large practice. He has not been inconvenienced in the slightest, except to pay me a visit from

some distance, and he is improving. Whether or not the results will be permanent in his case I do not know, but the relief he has gotten is unquestionably worth the trouble he has taken and the trouble I have taken to treat him.

Dr. Gideon Timberlake, Baltimore, Md.

I am particularly interested in this particular phase of therapy of the prostate. Dr. Hodges has given some very clear views of things, but all of them are not quite clear. Namely, he said there was a gland five times the size of the normal. The prostate gland is one and one-half inches wide.

Dr. Hodges says in the event these cases are not relieved by ordinary surgical procedures they are turned over to him. There is so much latitude in that. The average roentgenologist is not a clinician, and therefore how do you know that such and such a thing is the case? Take a -----, in particular, where the glands are involved showing hypertrophy, I think it is definitely proved that they are not myomata.

If I accept Dr. Hodges' view, his prostate will extend beyond the pelvic brim.

I had occasion to write for some information, and in reply got this letter from Dr. Waters, ad Hokins:

(Read letter.)

Dr. M. H. Wyman, Columbia, S. C.

A great many men come in with inflammatory prostate which interferes with the flow of urine to the bladder. You will let him void all he can and catheterize him and find a large amount of residual urine, say thirty ounces. You will think that he has a senile prostate, hypertrophied prostate, but that may be an inflammatory prostate. That man can be drained for a few days to let the inflammatory condition subside, and after a few days will be able to drain the bladder entirely. The term enlarged prostate, as I think Dr. Hodges means it, means a senile prostate, which is not an inflammatory type and which would necessitate an operation or some radical means to enable the man to empty his bladder. I am not quite prepared to think that the

X-ray should supplant the surgical means. However, I do think that Dr. Hodges has presented a very good explanation of the subject, and in connection with the surgeon, in properly working out a case, it may be there is a field for this new ray. We do not know much about it yet and have not had enough experience to know what the effect will be on the prostate. It has not been so many years that we have had the machines powerful enough to do this. I think Dr. Hodges is taking the proper view and not claiming too much for it. I believe he should pursue his endeavors, and it may be that a great many surgeons will be cut out of a great many operations in the future. I think the paper is very well presented and is well worth while.

Dr. Hodges, closing the discussion:

In the first place, I would like to say that the roentgenologists are clinicians, and most of them are good ones. In the second place, I have seen many prostates much larger than that. As to myomata, Dr. Timberlake disagrees with many eminent authorities. There is such a thing as a true myoma of the prostate, for I have seen them, taken them out, and made microscopic examination, and there is no question about it.

As to the action of the X-ray, I said in the paper that we only advocate it at all in early cases, where it was very questionable. No roentgenologist tries to determine what is to be done; it is only after the patient has had every other kind of treatment, has had massage, had rest, had diet, and everything else first, that the roentgen ray is resorted to. We are not advocating the use of the ray in cases who are good surgical risks and have any chance of getting through the operation. We all know this is a serious operation and carries a high mortality.

I was speaking not of inflamed prostate but of prostatic hypertrophy. The ordinary acute prostate will generally get well in the hospital and get out and go home. That is not the case I mean. The first is the case with not enough subjective symptoms to warrant an

operation, and the second is the man who is a poor surgical risk. You had better have a man in fair health than in the cemetery.

As to Dr. Waters letter, I know Dr. Waters intimately, and he said that the reason he could not use X-ray for prostatites was that the Radium Institute would not let him.

MANAGEMENT OF URETERAL CALCULI.

N. Bruce Edgerton, M.D., Columbia, S. C.

We shall make one broad statement as an introductory remark. Every patient suffering from either an acute or chronic pain in the abdominal region should at least have a specimen of urine examined microscopically and if Red Blood cells are present an X-ray made of this region to eliminate the possibility of urinary stone. I feel that it is most unwise to operate for appendicitis without this type of urinary examination. The urinary tract should be photographed if chronic abdominal pain is a feature even though the urine has no abnormal elements.

Until recently we felt that all of our surgeons and medical men were certainly making real progress in more carefully working out their cases previous to operation. During the month of January, three of my cases of ureteral stone had been operated on within the previous eight months for appendicitis. One case in July, one in September and one in October.

A. One patient has had backache and localized anterior tenderness since operation of the same character as suffered previous to operation. Her urine contained a few pus cells, the Ray was negative, but there was a small stone in the lower end of her right ureter.

B. Another patient passed a very small calculus while the appendix scar healed. She had recurrence of pain at numerous intervals from September, the date of original operation until January when she was referred to me. Her urine shows four or five red blood cells to a

high power microscopic field and a plain X-ray plate showed the shadow of a calculus at the uretero pelvic junction.

C. The last case was a man who was rushed to the hospital and operated on for appendicitis without either a microscopic on the urine or an X-ray of urinary tract. His original pain recurred one week after he left the hospital. The man who operated sent for him and an X-ray showed a calculus located in pelvis of kidney. Second operation refused although operator offered to carry out his work without a fee. Since October the ureter has gradually dilated ahead of the stone and now a plate shows the shadow in lower end of the left ureter. It is even across the abdomen from the operative area.

When people are handled in this fashion something is wrong. Each individual was in a different hospital and they were located in South Carolina. There shouldn't be any such hospitals. One man cannot manage all phases of diagnosis, correlate the facts, and keep abreast of the surgical advances. Just as long as these conditions exist, ureteral calculi will frequently be diagnosed appendicitis.

We have certain fairly well fixed principles to follow after the ureteral calculus has been located. There are only two methods of removal.

1. Open surgery with direct approach.

2. Closed surgery with indirect approach by means of the cystoscope and accessory instruments.

There are several factors that always play a part in the decision as to the best method. Each case must be dealt with as a new problem and the results of any procedure estimated from the sum total of definite existing conditions. i. e.: The size of the stone, its position in the urinary tract, the condition of the blocked or partially blocked kidney, the condition of the other kidney, the accessibility of a surgeon properly trained to manage the case, first probably by the closed method and later if occasion demands, by the open method. We do not feel that one should attempt to aid passage of the stone by the cystoscopic

route unless absolute management of the case till the stone is removed, is given him. The men doing general surgery, as a rule have no patience with the cystoscopic methods of removal and due to their lack of training in estimating these cases, they are often radical in their procedure. My feeling is that most ureteral stones should be managed first by the closed route and then by the open route. We much prefer and find it much more simple to cut down on a ureter and remove a stone than to remove some of the ones we have on our records by the closed method. On all cases of ureteral stone our plan is to attempt removal by cystoscopic methods with operation in reserve. It is not fair though for the urologist to attempt removal and then for the case to be operated on by a general surgeon. It isn't fair to the patient to fail to clean up an infected kidney after removal of a stone. This the urologist must do for the general surgeon is not equipped for time consuming labor of this character.

In the removal of ureteral stones, an essential is good equipment in a comfortable workroom with an available X-ray to follow the progress of the stone. Our opinion is in accord with those urologists who maintain that all ureteral stones cannot be removed by manipulation with ureteral instruments. We are confident, however, that we have available, highly specialized equipment, developed through the efforts of ingenious men in this field of surgery and that practically all small stones may be aided in passage down the ureter; and that some of the large stones if smooth surfaced and more or less regular in outline are assisted through the length of the ureter and into the bladder.

In the presence of an infected kidney blocked by a ureteral stone we are able to drain the kidney indefinitely by an inlaying catheter passed up by the stone and frequently the stone will be pulled on down as the catheter is removed.

In another case the stone will be passed after dilatation of the ureter below the stone with a mechanical dilator, metal olives, two bladed dilator, or by the passage of several bougies and catheters up by the side of the stone.

Sometimes a small stone will be passed after sterile oil has been injected around the stone. The anesthesia produced by novocain injected and held up by the stone seems to assist removal in some cases.

Credit for the development of instruments and the advancement of ideas in this particular field of work should be given Bransford Lewis, Bigbee, Burger, Kelly, Kretschner, Eisendrath and others and attention called to the papers of Crowell on this subject. Our feeling though, is that the plan of operation depends on a large number of factors and that we cannot say with a great degree of accuracy whether a particular stone can be removed by the indirect methods.

One important part of this work is complete ureteral and bladder anesthesia. Unless we are dealing with an associated urethral lesion, we use cocaine in the urethra in 2 per cent solution. In several cases we have used Caudal anesthesia and with perfect success. The injection of from 30 to 45 c.c. of a 1 per cent solution of novocain into the fascial covered triangular space at the lower sacral angle is without danger and affords complete anesthesia. I do these in my office and feel perfectly safe in letting the patient go home after completion of the scheduled work.

On some cases every available method will have been exhausted and then the stone must be removed by open operation, either on account of complications, lack of cooperation, or pure inability to note progress. As you all know, our usual cystoscopic work is carried out with the bladder filled with fluid and by the aid of a lens system instrument we do our work.

In a recent case with the stone firmly fixed in the lower end of the ureter three-fourth inch from the bladder, all my methods ordinarily employed had failed; I placed the patient in the knee chest position and, as advocated first by Dr. Kelly, through a straight tube and air dilatation with a reflected light passed a straight pair of forceps up the ureter, grasped the stone and came out with the stone in the blades of the forceps. After its removal, we noticed a groove through the side of the stone

along which the urine had trickled. This groove had protected the patients kidney and probably explained why my previous efforts had met with failure. We were unable to stimulate kidney colic, an essential in this method of removal.

In another case we passed a metal olive into the lower end of the ureter and left it there as a cork to force dilatation ahead of the stone. The patient later passed the olive and then the stone. This patient had refused an open operation and I determined to see the stone through. There were no complications except a partially destroyed kidney from partial obstruction over a long period. (Six months from the time it entered the ureter until passed.)

CHRONIC APPENDICITIS AS A CAUSE OF ACIDOSIS IN CHILDREN.

By Staurt McGuire of Richmond, Va., Surgeon
to McGuire Clinics.

The term acidosis was first employed by Naunyn to designate incompletely oxidized acid substances in the organism of a diabetic subject which produce an intoxication of the patient. Some time later Marcel Labbe showed that the acid syndrome may be encountered in morbid processes other than diabetes, and that it is often observed after starvation, prolonged vomiting, severe diarrhoea, certain febrile diseases, the administration of anesthetics and numerous other conditions.

It is not the purpose of this paper to attempt to discuss the present conception of acidosis. The original theory that it was simply a diminution of the reserved supply of the fixed bases of the blood and other tissues of the body has been found to be inadequate. In addition to the acid toxicity of the acetone compound there would have to be considered the special toxicity found to remain in the blood serum after it has

been restored to normal alkalinity by the exhibition of bicarbonate of soda. Then too the complicated pathological problems of hepatic insufficiency and renal impenetrability would have to be dealt with.

Let it be sufficient to say that acidosis is not a disease but a symptom. It is not a cause but a result. Like pain and fever it is merely the expression or manifestation of some disease or abnormal condition.

The acidosis syndrome is a familiar one to most practitioners. The patient suffers with slight but constant headache. There is usually drowsiness and sometimes stupor. The respiration is rapid and difficult. There is some fever, the temperature often reaching 102 to 104 degrees F. Anorexia is always marked. There is mild stomatitis with a red varnished tongue. Sometimes there is diarrhoea and usually repeated vomiting which at length may assume the pernicious type. Often there is abdominal and gastric tenderness such as to suggest appendicitis. The most characteristic symptom is the odor of the breath which resembles that of chloroform or a russet apple. The urine shows large quantities of acetone and traces of albumen and diacetic acid. This is sometimes absent in the early stages and most marked during convalescence.

It has been observed that certain children have recurring attacks of acidosis at intervals of three or four weeks. These patients are usually nervous highstrung subjects and the attacks are precipitated by constipation, imprudence in eating, excessive fatigue, over excitement, exposure to cold, or some acute illness. During the interval between the attacks, the child may have good digestion and appear to be in normal health. These patients properly go to the pediatricist who treats them in various ways with varying degrees of success.

While it is important to direct the child's mode of living and improve his general health by the observation of recognized sanitary measures, the most important factor in the treatment

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of these cases is the proper regulation of the diet, which should be low in fats and high in carbohydrates. Much benefit is often derived from testing the skin reaction of the various food proteins and eliminating those that are positive. It has long been recognized that a tendency to acidosis is created by local foci of infection hence diseased tonsils should be removed, abscessed teeth extracted, discharging ears treated and suppurative process glands, joints or bones properly dealt with.

In some cases despite all that can be done the attacks continue to recur and the child goes from bad to worse. Some years ago Dr. McGuire Newton, a child specialist of Richmond, brought such a case to me. He said that while he had no definite reasons for his opinion, he believed that the symptoms were due to chronic appendicitis. He stated that much had been written about acute appendicitis in children and the profession was aware of its frequency and danger, hence cases were as a rule diagnosed early and operated on promptly. He said that very little had been written about chronic appendicitis in children and he was sure the disease was more common than was generally supposed and that the manifestations were attributed to other causes until the diagnosis was cleared up by a frank attack. He gave the history of several children he had treated over a long period of time for recurring attacks of acidosis who had developed acute appendicitis and after the appendix had been removed ceased to suffer from acidosis. He spoke so earnestly and logically that I agreed to operate on his little patient, feeling justified in doing so because the case had been long and carefully studied and all the usual methods of treatment had been faithfully tried without benefit. On opening the abdomen I found and removed a kinked and adherent appendix evidently the seat of chronic infection. The child made an uneventful recovery, gained weight and strength rapidly and has had no further attacks of acidosis.

Since the case just described I have done the same operation for similar

symptoms on fifteen other patients and the successful results have been so uniform and gratifying that I have feared I might drift into the delusion that appendectomy was indicated in all cases of recurring acidosis in children. I have tried to protect myself from this serious danger by being doubly careful in my diagnostic study of these patients, and being slow to bring myself to the point of advising operation. To this may probably be attributed the successful results reported.

The diagnosis of chronic appendicitis is often difficult in the case of an intelligent adult, who can give his history and describe his symptoms. It is naturally much more difficult in a child, who is sick one day and well the next, and whose mouth piece is usually a young and anxious mother. The absence of pain or tenderness by no means excludes chronic appendicitis. Fortunately, as brought out by Dr. A. L. Gray in a paper written in 1920, the improved technique of X-Ray examination of the gastro-intestinal tract will often give information of great value as to the condition of the appendix. A positive diagnosis of chronic appendicitis may be made if the X-ray shows.

1. Adhesions about the appendix?
2. Concretion in the appendix
3. Constant constrictions in the appendix
4. Delayed emptying of the appendix
5. Presence of tenderness which follows the appendix when it is manually displaced under fluoroscopic examination.

A negative report after an X-ray examination does not exclude chronic appendicitis. If the lumen fails to fill after the administration of a barium meal it may mean the total occlusion of the appendix, or it may mean a transient filling and emptying so that at the time of examination it is empty. An empty appendix is of no definite significance. Therefore, an X-ray is valuable in these cases when it is positive, but is unreliable when it is negative.

The time limit of this paper will not permit a detail report of the sixteen

cases in which I have removed the appendix for recurring attacks of acidosis, but I desire to record one recent and severe case where the X-ray was negative but whose life I am confident was saved by the operation. This case is of special interest because I was forced to operate during an acute attack which is contrary to my usual practice and because in addition to removing the appendix I also did a cecostomy in order to introduce fluid into the large bowel.

E. V. M., female, aged eleven, entered St. Luke's Hospital May 21, 1923. Her mother stated that she had repeated attacks of acidosis between her first and sixth year. Her tonsils were then removed and she had no further attacks for three years. When nine years of age the attack recurred. On admission to the hospital she had been ill with an attack for four days. Examination showed the patient emaciated and dehydrated, skin cold and gray in color, pupils markedly dilated, eyes sunken and staring, lips and tongue red and parched, respiration deep and sighing. Urinalysis showed presence of acetone and diacetic acid. Patient constantly begged for water which was promptly vomited regardless of the amount taken. The case was turned over to Dr. Howard Urbach, a specialist in diseases of children, who treated her medically along accepted lines. The patient was critically ill for ten days and then began to improve. In two weeks she gained nine pounds in weight and was able to walk about the hospital and go for an automobile ride.

A careful general examination was then made to try to determine the cause of the recurring attacks of acidosis. There was apparently slight tenderness over the appendix, but this was not marked. X-ray of the gastrointestinal tract was negative except that the stomach was found slightly larger than normal. The father and mother were told that it was impossible to make a definite diagnosis but that in view of experience in similar cases it was believed it would be wise to remove the appendix. The parents consented

to the operation but urged postponement in order to let the child gain additional weight and strength. This was agreed to but on June 19th while the child was still in the hospital under careful supervision she complained of headaches, and despite prompt and vigorous treatment developed severe symptoms of acidosis. For four weeks she was desperately ill and failed to improve under the measures suggested by various consultants. Finally it became evident that death was imminent and inevitable unless something radical was done, and an operation was determined on as a final effort to save life. Under local anesthesia aided by light inhalations of gas-oxygen the abdomen was opened, the appendix removed and a rubber tube inserted into the cecum after the technique suggested by Dr. J. W. Long for enterostomy. The appendix was found chronically inflamed and adherent. Examination showed a stricture at the base and two concretions in its lumen. After the patient was returned to bed fluids were given by mouth to relieve the intense thirst and a solution of soda and glucose was injected through the tube into the bowel every hour to supply fluid to her dehydrated tissues. For two days her life apparently hung by a thread but then the vomiting lessened, the thirst diminished and from that time on she made a rapid and uneventful recovery. The patient's estimated weight at the time of operation was 35 pounds. Four months later her weight was 70 pounds and she was in good general health.

So many unnecessary and injudicious operations have been done for supposed chronic appendicitis that I have hesitated to write a paper which even in a small way might add to the number, but my experience has been such that I feel justified in advising appendectomy in cases of recurring attacks of acidosis in children when hygienic and dietetic treatment have been exhausted without relief and where no other focus of infection can be discovered. Under these conditions I would urge the operation with great confidence if the X-ray examination showed the appendix was not normal,

LAWRENCE HOSPITAL, CASE NO.

1143, WINSTON-SALEM, N. C.

Mr. J. C. White, age 54, married. Admitted to hospital 4-22-22 with the following history. Chief complaint: Shortness of breath and wheezing. History of Present Illness: Begun 20 years ago, almost suddenly as, dyspnea with a cold, and difficult breathing. Condition got better for awhile, and had exacerbation, which has recurred until now, is worse in spring and fall of year and does not have any relation to any particular pollins. Frequently has sore throat and contracts cold easily.

Family History: Two brothers and one sister died of T. B.

Past History: Has had usual diseases of childhood. None followed by complications. Otherwise has never had disease of importance. Has been easy to take cold and asthmatic condition is exaggerated with a sore throat.

Physical Examination: Temperature 99, pulse 88, respiration 28. A fairly well nourished and developed middle age man with respiratory wheezing, audible ten feet away. Head, hair, scalp, ears and eyes: Normal. Mouth, throat, lips and m.m.: Congested and appear somewhat cyanotic. All teeth are of a very dark color, many are decayed and a rather marked pyorrhea exists. Tonsillar pillars are markedly congested and swollen. Tonsils hypertrophied and oedematous. Marked post pharyngeal hypertrophy. Neck: Many enlarged glands. Chest: Remains almost stationary in a state of full inspiration. No vocal fremitus elicited. Hyper-resonant all over. Auscultation many musical dry sibilant and sonorus rales are heard all over chest on inspiration and expiration. The maximum intensity on expira-

tion, with marked prolonged expiration. Heart: No impulse detected. Areas of cardiac dullness much lessened on account of overlapping emphysematous lung. Sounds distant but distinct and no murmurs nor accentuations.

Pulse: Full and regular. Abdomen: Negative. G. U. Skin, bones and joints, glandular; Negative. Neuro-muscular: Upper extremities show marked coarse irregular tremor, much exaggerated on attempt at voluntary muscular movement.

Urine: Twelve hour specimen, color amber, reaction alkaline, specific gravity 1014, no sediment, no albumin, no sugar. Few triple phosphates.

X-Ray: X-ray of teeth shows all upper teeth to be abscessed except mesial incisors with several snags on both sides that are almost covered over with soft tissues. Lower set shows left cuspid and right lateral incisors abscessed. Others in fair condition.

Operative Record: Diagnosis: Bronchial asthma. Focal infection. 4-5-22. Under general anesthetic tonsils and adenoids removed. All teeth extracted.

Convalescent Record: 4-12-22. Patient left the hospital in good condition. Feels good, teeth and tonsillar sockets fairly well healed. Breathing is 50 per cent better and he looks better in every respect. Nervousness is much improved.

3-21-24. This patient has been seen from time to time since his discharge from hospital, now nearly two years, aside from a mild degree of emphysema, he has remained well and able to make a crop each year. Our experience is that asthma is a toxic condition due to focal infection, and chronic fatigue. When these agents are removed the asthma will get well. Ether anesthesia will relieve an attack of asthma.

SOUTHERN MEDICINE AND SURGERY

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J. C. MONTGOMERY, M. D. { *Editors*

CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

Meeting of North Carolina Medical Society.

Approximately- five hundred physicians attended the seventy-first annual meeting of the Medical Society of the State of North Carolina, held at Raleigh April 15-17.

The sessions were held in the Sir Walter hotel, which provided abundant convenience and comfort for guests and assemblies.

The President, Dr. J. Vance McGougan, chose as a title for his address, "Whither Are We Drifting" and presented facts to make the profession "sit up and take notice." His plea was that doctors first set their own house in order by eliminating objectionable features that have insidiously crept in and then to present a united front against all forms of outside dangers attacking the sacredness of the profession of medicine. The urging theme of the medical profession must always be the best that can be given to prevent and relieve human illness. Quacks and cults that prey on the credulity of suffering humanity are the worst sort of humbugs and a menace to civilization. It is just as much the duty of the honest physician to protect the public against such a menace as it is to protect them against the menace of epidemics, or relieve them of any illness or injury. The man who condones quackery by failing to give to the people the information he possesses concerning its falacy is culpable of breach of trust.

Dr. McGougan urged the medical profession to participate more actively and

directly in the matter of legislation to the end of safeguarding the interests of the great mass of humanity who look to the established profession for help.

Dr. Royal S. Copeland, invited guest and senator from New York, also emphasized the fact that doctors who come into touch with the mass of the people on terms of intimacy that cannot be attained by any other class of people, are, by reason of this intimacy, better qualified to interpret the needs and desires of the people than any other class and therefore have a moral obligation of becoming law makers and legislators. Doctors are in a position to interpret the things they see, the needs and desires of their patients, into wise and humane laws, and for that reason ought to sacrifice their own interests, and enter law making bodies for the common good.

The program of the entire three days session was filled with the very highest grade of professional papers which proves that the profession of the State is doing its best to live up to the highest ideals of progress.

Officers selected follow:

President, Dr. Albert Anderson, Raleigh.

Vice Presidents: Dr. W. L. Dunn, Asheville. Dr. A. E. Bell, Mooresville; Dr. K. G. Averitt, Cedar Creek, Cumberland county.

Secretary and Treasurer, Dr. L. B. McBrayer, Aberdeen.

Delegates to American Medical Association, Dr. W. L. Stevens, Asheville.

Delegates to South Carolina convention, Dr. J. O. McClelland, Maxton; Dr. Joseph Nobles, Greenville; Dr. J. B. Sidbury, Wilmington; Dr. J. D. Benbow, Winston-Salem.

Delegates to Virginia convention, Dr. Floyd Wooten, Winston-Salem; Dr. Boyce, Rocky Mount; Dr. A. W. Green, Tarboro; Dr. J. C. Sherrill, Statesville; Dr. T. G. Beall, Black Mountain.

Committee on Scientific Work, Dr. W. B. MacNider, Chapel Hill; Dr. C. A. Shore, Raleigh; Dr. Edward J. Wood, Wilmington.

Publications, Dr. L. B. McBrayer, Dr. H. C. Brockman, Dr. M. L. Townsend.

Obituaries, Dr. A. W. Knox, Dr. C. F. Stroesnider, Dr. F. L. Liter.

Public Policy and Legislation, Dr. W. A. Monroe, Dr. K. P. B. Bonner; Dr. A. A. Kent.

Finances, Dr. A. C. Everitt, Dr. W. A. Ashworth and Dr. W. F. Hargrove.

Memorial, Dr. J. P. Munroe, Dr. A. J. Crowell, Dr. L. B. McBrayer, Dr. J. M. Parrott, Dr. J. F. Burns.

Pinehurst was selected as the place of the next annual meeting of the Society, and Dr. W. C. Mudgett was named as the chairman of the committee on arrangements.

South Carolina Medical Society Meeting.

The meeting of the South Carolina Medical Association held at Orangeburg April 15-17, 1924, was in every way most helpful and successful.

The attendance was large and the enthusiasm splendid. Legislation in the House of Delegates was conservative and a spirit of social good feeling and mutual cooperation pervaded the entire assembly.

Officers elected:

President, D. L. Crosson, Leesville, S. C.

First Vice President, Geo. H. Bunch, Columbia, S. C.

Second Vice President, L. C. Shecut, Orangeburg, S. C.

Third Vice President, C. J. Lemmon, Sumter, S. C.

Secretary and Treasurer, E. A. Hines (reelected), Seneca, S. C.

Councillors:

Second District, S. E. Harmon, Columbia, S. C.

Fourth District, J. R. Young, Anderson, S. C.

Sixth District, G. R. May, Bennettsville, S. C.

Eighth District, C. I. Green, Orangeburg, S. C.

Members State Board of Medical Examiners:

Sixth District, E. M. Dibble, Marion, S. C.

State at Large, A. E. Boozer, Columbia, S. C.

Dr. William A. Pusey, President-

Elect of the American Medical Association delivered an admirable address entitled "The Economic and Social Status of the Physician," before the Association.

The attendance was large approximating four hundred. The next meeting will be held in Spartanburg, S. C., April, 1925.

FOOD AND PHILOLOGY

By Robert E. Seibels, M. D., Columbia, S. C.

The descriptive terms employed in medical language would suggest that the aesculapian philologist is also an epicure for his richest adjectives are culled from the bounteous board and he can but seldom refrain from serving his pathology with a choice sauce of nourishing attributives.

The necrobiotic discharges from sinuses, abscesses and fistulae as well as the effluvia from the genital tract are thus called cheesy or creamy pus or milky discharge. The barn yard and dairy further furnish a beefy tongue in pellagra, a ham colored syphilitic eruption, chicken-fat clots and porky inflammatory tissue. The meaty odor of lochia is followed by the fishy smell of leucorrhoea. Masses in the abdomen are egg or sausage shaped while ovarian cysts are regularly of grapefruit size.

Cancer is often cauliflower-like or mush-room shaped and your enthusiastic verbal artist can scarcely resist serving his lung abscess with an anchovy paste sputum. Prune-juice expectoration appears in the influenza descriptions as regularly as the humble prune is said to grace the boarding house table.

The scarletina tongue must be strawberry red to satisfy the epidemiologist while the urologist loses his interest in a urethral caruncle which is not raspberry red. Endometrial implants on the peritoneum are blueberry masses. The strawberry gall bladder must be removed.

The mustard yellow stools of infancy become rice-water stools in sprue while typhoid fever would lose its zest if the pea-soup stools were omitted. The doc-

tor's hand is withheld in intususception until the apple-jelly movement whets his surgical appetite. Bean curds on a protein intake are as familiar as the cinnamon feces of malt products.

Amyloid spleen is made redolent of the Sunday pudding when it becomes stuffed with sago-bodies, while the poor "prostatique" labors and brings forth rice-bodies. That urine should be water may be reason—but how about the sugar?

Vermecelli masses of round worms in the intestine give rise to tomato-gruel stools, while a doughy mass in the colon leads our thoughts to something else. The coffee ground vomitus of intestinal obstruction may follow a free dissemination of chocolate cysts of the ovary. The biscuit bugs of gonorrhoea we find even in the most exclusive society while the port wine birthmarks are reminders of more convivial feasts. Claret flows when the surgeon's knife runs wild, especially in removing the cream puff ovarian abscess.

MEDICINE

Wm. B. Porter, M. D., Dept. Editor.

The Resistance of Malaria to Quinn.

In 1917, reports began to appear that English soldiers in the tropics were being attacked by malaria that quinin would not cure. Pratt-Johnson and Gilchrist found that relapses were reported in 23 per cent. of 18,000 soldiers in Africa while quinin was being administered; Phear reported in Macedonia that quinin was ineffective in malaria that was complicated by dysentery; Willcox in Mesopotamia encountered cases that did not improve under quinin by mouth for ten days; Mackie found quinin ineffective in malaria in northern Persia, and the accumulation of invalids in Saloniki was constantly increasing. Such contradiction and disappointment concerning quinin led to an extensive experimental and clinical inquiry into the treatment of malaria at the Liverpool School of Tropical Medicine, the results of which, unfor-

tunately, did not entirely restore confidence in quinin.

Many soldiers were sent back to England from Macedonia in 1918, and Sir Ronald Ross arranged to treat the malaria patients in special wards at Southampton. In recently published notes, Fletcher¹ says that 1,150 patients were admitted to these wards in twelve months, and that on landing parasites were found in the peripheral blood in 487. Although many had documentary evidence of treatment with quinin in various hospitals, they were placed on 10 grains of quinin by mouth twice a day. There was strict supervision of these patients, and special interest in relapses that might occur. In every instance the routine treatment prescribed at Southampton caused both fever and parasites to disappear.

Fletcher emphasizes the Southampton experience by a report of his observations in the Federated Malay States since the war. The patients seen there were little more than skeletons, and dysentery was a complication in 53 per cent. Forty-four difficult cases in which quinin had been disappointing were selected, and 10 grains (0.65 gm.) of quinin by mouth twice a day was given for four weeks. The drug was placed in the patient's mouth by the physician, and, after it had been swallowed, the mouth was inspected. Not one of these coolies in Kuala Lumpur failed to improve. There was in one a small number of parasites that persisted in the blood in spite of quinin, but in every other case, both fever and parasites disappeared. Dysentery did not make any difference. When quinin was actually swallowed and retained, malaria in dysentery patients was as easily controlled as in patients who did not have dysentery. The conclusion of this study was the same as among soldiers in Southampton: that the so-called resistance to quinin vanished when the quinin was actually swallowed and retained.

The obvious alternative would seem to be to resort to injections. Intramuscular injections of quinin were used extensively in the campaign in Mace-

donia, and this practice was subjected to inquiry. It was demonstrated experimentally that whatever concentration or whatever salt was injected, there was necrosis of the muscle at the site of injection. Large nerves may be involved with paralysis, and abscesses may form. Sir Patrick Manson opposed intramuscular injections unless made for good reasons. Sir Ronald Ross has repeatedly expressed his opposition in ordinary cases. It is not generally recognized that intramuscular injections of quinin always cause necrosis, or that quinin is absorbed more quickly by mouth. Fletcher in Kuala Lumpur injected 10 grains of the dihydrochlorid in 22 minims of salt solution into each buttock of twenty-two patients. The shortest time in which quinin appeared in the urine of any patient was twenty minutes, and the average time was sixty minutes. The same amount of the same salt was given by mouth to a similar group of patients, and the shortest time in which quinin appeared in the urine of any patient was less than fifteen minutes, and the average time thirty-one minutes.

There is a profound fall in blood pressure when quinin is introduced intravenously, which seriously affects the respiratory center. Fletcher has seen one death and one case of serious illness due to sepsis after intravenous quinin injections. In a clinical investigation of rectal injections he concluded that quinin is too irritating to be administered in that manner.

In general, Fletcher's report is a plea for the restoration of faith in quinin in malaria, and for its oral administration. He does not say that an absolute resistance to quinin is impossible, but in a wide experience he has not seen one case of actual resistance.—*Jour. A. M. A.*, April 5, 1924.

SURGERY

A. E. Baker, M. D., Dept. Editor

No class of surgery is so urgent as that of traumatic injury to the abdomi-

nal viscera, if life is to be conserved. For often the error is made of waiting for symptoms during which time all opportunity to do successful surgery is lost. In the Canadian Association Journal 1923 Dr. Lockwood has an able paper on "Surgical Possibilities in Traumatic Rupture of the Intestine," in which he states that, "Rupture of the intestine may be caused by sharp blows on the abdomen, compression of crushing, indirect force, or sudden increase in the air pressure within the lumen of the bowel. The most common cause is direct compression of the intestine against the vertebral column, the promontory of the sacrum, or the pelvic crest. The rupture, may be complete or incomplete. As a rule the small bowel is completely severed while the large bowel is only partially ruptured. Lacerations of the small intestine tend to be localized to the fixed portions. Lesions of the duodenum and colon are frequently retroperitoneal.

The author has collected the reports of 652 cases of traumatic rupture, of the intestine occurring in civil life. The small bowel was the site of the rupture in 90 per cent. In the 10 per cent in which the large intestine was ruptured, the caecum, transverse colon, and pelvic colon were involved in the order named.

The symptoms of intestinal rupture depends on a great variety of conditions such as the nature and site of the lesion, the presence of lesions in other viscera, the patient's resistance, the fullness of the bowel, the treatment, the time since injury, the ingestion of fluids, and the administration of morphine. They may appear immediately or late. They may be greatly delayed even when there is complete rupture of the intestine.

Primary shock appears almost immediately after rupture. Apart from hemorrhage, the onset of shock and its severity do not constitute an indication of the extent of the rupture. Primary shock occurred in 80 per cent of a large series of cases.

The Temperature is usually subnormal, the pulse weak and rapid, and the

respiration of the thoracic type. With the reaction from the shock the temperature rises. If it falls again and there is increasing rapidity of the pulse rate, the condition is serious. A high temperature usually occurs in late cases and indicates grave peritonitis.

Vomiting is a very important symptom and invariably present. It occurs early if the lesion is located high up in the small bowel.

Pain and tenderness aside from the superficial bruising is a well-localized deep pain often radiating to the loins or deep pelvis.

Abdominal rigidity, either general or localized over the area of injury, is typical and present in practically all cases. Progressive board-like rigidity indicates serious trouble, frequently a spreading peritonitis.

Abdominal distention with tympany may be of the paralytic type. Increasing distention eight to ten hours after the injury is a grave sign.

The absence of liver dullness is evidence of serious trouble and worthless for early diagnosis as it occurs only in late cases after the time for surgical operation has passed.

Surgical emphysema occurs in associated retroperitoneal rupture of the duodenum and colon.

The extreme importance of the early diagnosis of rupture of the bowel cannot be exaggerated. A delay of one hour at the critical time will destroy any chance of surgical aid. It is important to exclude thoracic, renal, and spinal injuries. The author operates on all persons who, following a blow on the abdomen, a crushing injury, or a fall, complains of severe abdominal pain which lasts for more than four to six hours and is associated with tenderness, vomiting, rigidity, and an increasing pulse rate.

Practically all cases of rupture of the bowel are fatal unless are operated upon. Lesions of the large bowel are obviously more dangerous because of the greater danger of peritonitis. Just as in cases of perforated gastric ulcers, the most important element in the prognosis is the time elapsing between the

injury and the operation. The prognosis is best when the operation is performed within six hours of the injury. In cases operated upon after twenty-hours the chance for recovery is slight.

Of twenty-seven cases of intestinal rupture seen by the author in the period from 1914 to 1918, fourteen came too late for surgery and were fatal. In thirteen operated upon there were five recoveries. Rupture of the bladder and retroperitoneal injuries with kidney lesions complicated two fatal cases each.

Operations should be performed at the earliest possible moment after the subsidence of shock. The shock should be combated by blood transfusion, heat, morphine, and saline solution. At operation in the author's cases anesthesia is induced with nitrous oxide and infiltration of the abdominal wall with novocaine. A wide incision is made over the site of injury. First, the site of rupture is explored and all perforations found are closed. The small bowel is then examined from the ileocaecal valve to the stomach and the large bowel from the caecum to the rectum. The spleen, kidneys, stomach, pancreas, liver, bladder, and rectum are palpated. Multiple ruptures occur in 20 per cent of cases. Resection of the bowel should be avoided and is rarely necessary.

If resection is necessary, an end-to-end anastomosis is preferable in both the large and the small intestine. The author completes the toilet of the peritoneum by mopping out the abdomen with gauze wet with saline solution. Irrigation and lavage of the peritoneum are dangerous. In the author's case a hypodermoclysis of saline solution is given and a solution of sodium bicarbonate and glucose is administered by rectum every four to eight hours for forty-eight hours. Morphine is prescribed to slow the respiration and inhibit peristalsis.

In the late cases the only treatment possible is suprapubic drainage, the administration of morphine, and hot applications to the abdomen. These cases are usually fatal.

Gynecology and Obstetrics

Robert E. Seibels, M. D., Dept. Editor

The Diagnosis of Pregnancy.

The sugar tolerance test was applied by G. C. Milnor and E. A. Fennel, Honolulu, T. H. (*Journal A. M. A.*, Feb. 16, 1924), in cases in which it was important to make a diagnosis concerning pregnancy before the physical signs permitted. Excluding cases of hepatic disease, carcinoma of the alimentary tract and hyperthyroidism, they have performed this test on thirty-eight normal women, either pregnant or nonpregnant. Of the thirty-eight women, eighteen proved, in the course of events, to have been not pregnant, sixteen proved to be pregnant, and four were lost to further observation. Of the eighteen nonpregnant women, seventeen gave a negative test, i. e., developed no glycosuria and one gave a doubtful reaction. Of the sixteen women proved to be pregnant fifteen gave positive reactions and one a negative one. This failure is interesting since the test was performed ten days after the first coitus and five days after the first missed menstrual period. The authors' experience with phlorizin has been disappointing. In seven cases of proved pregnancy five gave positive reactions and two very doubtful ones. Of twelve nonpregnant cases including three men all gave positive reactions except two women. In making the simple sugar tolerance test they use from 50 to 100 gm. of glucose, depending on the weight of the patient. The blood sugar at the forty-five minute period is the most important of the three estimations; the other two may be omitted if time and circumstance demand it. The authors found that nausea or vomiting if present in the pregnant patients, rather regularly occurs at the forty-five minute period, at the height of the blood sugar curve. They have found that the sugar tolerance test is of great practical value during the first three months of pregnancy, and that the positive reac-

tion usually disappears thereafter, but frequently reappears during the last two months and persists several weeks after parturition. A large meal, rich in carbohydrates, may be substituted for the glucose. In two cases of suspected abortion, the test has been positive and the histologic examination of curettings has discovered syncytial and decidual cells. The assumption that in pregnancy the permeability of the kidney cells, per se, is increased, the authors believe to be unwarranted. It is, however, on such a basis that the rationale of the phlorizin test is based. It seems to them more reasonable to postulate, in pregnancy, an imbalance in the internal secretory mechanism in this newly acquired physiologic state, and again in the later stages, preceding lactation. Such disturbances of internal secretion might well be looked for in the ovary, liver, thyroid and pancreas. It seems more reasonable to suppose that the mobilization of carbohydrates in liver and muscles is disturbed, and that the addition of an insult of 100 gm. of glucose rapidly brings the blood sugar content to the point of intolerance. The conservative mechanism then permits an overflow of sugar into the urine and frequently a disgoring of the remainder of the excess in the stomach.

Urology

A. J. Crowell, M. D., Dept. Editor

Possible Errors In the Diagnosis of Renal Tuberculosis.

Renal tuberculosis is recognized clinically without much difficulty when the usual clinical data are present. Unfortunately, however, the diagnosis of the disease is frequently obscured, either by the absence of any clinical data indicative of involvement of the urinary tract, or by the presence of data that are suggestive of conditions other than tuberculosis. According to William F. Braasch and Albert J. Scholl, Rochester, Minn. (*Journal A. M. A.*, March 1, 1924), repeated examinations of the urine for the bacillus of tuberculosis, and guinea-pig inoculations at

variable intervals, may be the only method of establishing the diagnosis. When repeated guinea-pig inoculations with the urine from one kidney are positive, even though no other clinical data are present, the inoculation results can usually be regarded as sufficient to warrant operation. The renal lesion in such cases is characterized by encapsulation of the infected renal areas. The number of pus cells found in the microscopic examination of the catheterized urine is not at all indicative of the extent of the lesion. The finding of one or two pus cells in the catheterized urine from the supposedly healthy kidney is not of much practical significance. Confusion of vesical granuloma accompanying renal tuberculosis with vesical neoplasm is not uncommon, and differentiation is best made by microscopic examination. With ureteral stricture, and particularly with secondary infection, the clinical data usually observed with renal tuberculosis may be obscured. Bilateral tuberculosis occurs more commonly than the usual clinical data indicate. In cases of bilateral renal tuberculosis in which only one kidney is markedly diseased, removal of this kidney is justified. Tuberculosis in the supposedly healthy kidney is probably a common cause of death within a year or two after nephrectomy. Spontaneous recovery from acute renal tuberculosis must be regarded as possible in exceptional instances.

Ureteral Stricture.

A case, illustrating the influence of ureter stricture on the formation of urinary calculi and on recurring calculi is reported by Guy L. Hunner, Baltimore (Journal A. M. A., Feb. 16, 1924), and the whole subject of urinary calculi is reviewed. In Hunner's experience, ureteral stones are usually found in one of two areas, namely, from 3 to 5 cm. below the pelvic brim, and from 2 to 5 cm. above the bladder, in the very areas in which nearly all strictures occur. Many ureteral stones found above the pelvic brim are undoubtedly stones which have formed in a stricture area, and because of the dilatation above the

stricture they have become freed and floated upward as migrating stones. Some bladder stones form in a ureteral stricture area and are forced out into the bladder. Such stones in women are usually passed spontaneously. Many ureteral stones have a wide, tortuous channel on one side through which urine can pass with the utmost freedom. Merely from the patient's history and urinalysis no one can decide whether a given attack is due to stricture or to calculus. Some patients give a history of discomforts located on one side only, and investigation shows a stricture on that side causing more or less damage to the upper urinary tract. On taking a pyelogram of this side, a stone shadow is seen in the opposite kidney which has been free from symptoms, and further investigation reveals stricture on this symptomless side. Hunner makes it a practice not to operate for a stone in the kidney without a thorough investigation of both ureters for stricture; and, as bilateral stricture is usually found in such cases, both ureters are well dilated before the operation. Many stones in the kidney originate from an infection of the urine. In what percentage of cases this urinary infection occurs with the primary damage to the urinary tract, and in what percentage there may have been a previous lesion in the tract, leading to stasis of the urine before it has become infected, are problems for future investigation. In the case reported, the patient, a woman, aged 36, was the victim of recurring calculus disease of both kidneys and both ureters, necessitating many operations and the removal of one kidney and not eventuating in an apparent cure until the ureteral strictures were recognized and dilated. Hunner is convinced that this case proves the etiologic relationship between stricture of the ureter and urinary calculus. He contends that if this patient had been seen by some one familiar with ureteral stricture work when her first symptoms of cystitis, such as polyuria, dysuria and hematuria, began six years before her first hospital admission the diagnosis of ureteral stricture could have been made

promptly, and proper treatment would have prevented the formation of the first ureteral stone. Had the patient not been seen until her first hospital admission, and had the importance of ureteral stricture in stone formation been appreciated at that time, the patient would have been followed with ureteral dilations after the passage of the ureteral stone. If, at the time of her first admission, the fact that ureteral stricture is almost always bilateral, had been appreciated and if the evidence of a former inflammatory condition about the lower left ureter, as furnished by the shadows of phleboliths or calcified glands in this region had been noted, Hunner would have begun ureteral stricture dilations on this side, in spite of the fact that the patient had not as yet had symptoms on the left side. To these ureteral treatments would have been added the attention to focal infections, and it is almost certain that instead of being a much mutilated woman with only one kidney and a questionable prognosis for the future, this patient would have enjoyed normal health and would now be the possessor of two good kidneys.

Mental and Nervous

James K. Hall, M. D., Dept. Editor

On Prejudice Against Medical Testimony

Frequently-repeated objection to so-called expert medical testimony is found especially in the daily press. This is noticeably true with reference to an opinion about mental unsoundness. The reasons for this prejudice against a medical opinion are not easy to understand. The expressed opinion of the physician about a bodily ailment, if not accepted, is usually not derided. A diagnosis of typhoid fever is accepted. The opinion that a sick person has tuberculosis is often final. If the doctor says, for instance, that a particular person should go to the hospital for the purpose of having the appendix removed, preparation for the procedure is instituted. Even if the diagnosis of

some physical ailment turns out to be incorrect—well, a doctor is only human and not a god, and errors amongst mortals may be expected. But so certain as a medical man offers in Court, or to the Court, the opinion that a defendant is mentally so unsound as to be probably irresponsible, just so certain will that doctor's statement be assailed. Not only will his opinion be attacked, but often the doctor's motives will be impugned, and his character assaulted.

In a capital case, in which the life of the defendant is at stake, the doctor who makes the diagnosis of insanity in the prisoner may promptly expect to read in the papers that his opinion was purchased. Sometimes the intimation is strong that the medical service was rendered to the strongest bidder. And one often hears wonderment expressed that a doctor should fight so vigorously in the witness chair for his opinion. This should not occasion surprise. Any opinion worthy to be held is worthy to be defended—even the diagnosis of insanity in a negro murderer. Most people are willing to fight for their possessions. No possession, no property, no tangible and material thing, is so valuable as an opinion, an idea. An opinion is indicative of the character of its possessor. We estimate people by the character of the ideas they hold to. We judge of their courage by the willingness and the vigour with which they defend their ideas. An opinion constitutes a commodity. It has a sale value, if it be a useful, helpful opinion. Professional people are those who have for sale expert, technical knowledge. The newspaper man sells his ideas through the printed page. Theodore Roosevelt is reputed to have sold the account of his African hunt for a dollar a word. The lawyer, high or low, sells his legal opinions. The judge on the bench is only a mass of opinions. The minister barter away his theological and philosophic thoughts. The chemist, the engineer, the astronomer, the electrician, the banker, the statesman, the school teacher, the soldier, the sailor, the architect are serviceable only because they have put themselves in possession

of ideas useful to mankind. Professional people live by making sale of their opinions; others live by making application of them.

Most folks know that the majority of doctors are reasonably intelligent; most folks believe that most doctors are honest and honorable. Why is the doctor whose opinion is sought in the family, and whose advice is accepted, assailed and assaulted in the court-room? If he is honorable and upright in the outside world, why is he crooked and characterless within the Temple of Justice? Who knows?

On Obedience To the Law

One wonders what the term may mean. As I ride almost daily into the city that is the pride of the South I pass many of the objects to which visitors from all countries pay homage. I refer to monuments erected in memory of men now recognized by all people as great men. Yet these great characters were believed by many at one time, to be living in open rebellion against the law of their land. But who now believes that Stonewall Jackson, Jefferson Davis, Lee, J. E. B. Stuart and Thomas Jefferson and George Washington were traitors? What is the law? Is it words printed upon a page, or is it some guiding influence within the individual? Wherever one may turn one finds upreared memorials to those who battled against the existing order. The memory of those who accepted the situation and who lived in conformity with prevailing custom is lost in the cob-webs of oblivion. The majesty of the law,—what is it? Criminals today? Tomorrow—forgotten? deified? which? why?

On Mental Unsoundness

What is mental soundness? And mental unsoundness, what is that? The notion is encountered that it is a fixed, definite, specific state. There is a prevailing opinion that a chasm, wide, uncrossable, exists between the two states. They are wide apart, so some would seem to think, like life and death. They are thought to be mutually exclusive—

where one is the other cannot be. They are thought to be incapable of intermingling and mixing together. But are these things so? Hardly. Behavior, or conduct, all that an individual does, constitutes about the best signs by which to measure his thought processes—the state of his mind. If he behave wisely, so is he; if he behave foolishly, God save him, he is not right. But what is behavior if not reaction to environment, and if the surroundings be new and strange may not the conduct be correspondingly unusual? In an air plane, for the first time two miles above land, might not one's behavior be somewhat different from one's normal conduct, or from the community normal? In a submarine for the first time, deep down in the sea, might not the same be true? In a death cell, awaiting electrocution, what is the accepted normal behavior? Or in a front-line battle-trench, for the first time, amidst bombs and gas and shells and liquid fire and death and destruction, how would one comport one's self? Go face forward, or seek quickly safe shelter? How splendidly would a Wall street banker adjust himself to life with only a steer and ten acres of Yancy County soil? How comfortable and pleasing would be the behavior of a Carroll County mountaineer in the King's palace? Modern life is becoming so complicated that living is constantly being made more difficult and more hazardous—if one would avoid entanglements in the law. Negative inactivity may call down upon one legal vengeance. If property is not listed, returns made, taxes paid—well, the law must be obeyed: we are living in a maze of man-made laws; violations are inevitable. Have people become more lawless? Have not the laws been so multiplied in numbers that the Law has lost its majesty and grandeur? It has become as ubiquitous and as annoying as the weather. No one but a mental mountain-climber can hope to grapple with it; mental weaklings cannot adjust themselves to it. Mental normality is a relative term. The main function of the mind is to enable one to adjust one's self to one's immediate surroundings.

If the environment be strange or complex adjustment will be more difficult—if too strange or too complex the maladjustment may amount to crime or to insanity or to some other form of tragedy. An investigation of personal maladjustment, whatever its nature, should call for inquiry into the environment as well as into the individual. So would we better understand our more unfortunate fellowman.

Pediatrics

Frank Howard Richardson, M.D., Dept. Ed.

Convalescent Whole Blood, Plasma and Serum In Prophylaxis of Measles.

Experience has convinced Arbaham Zingher, New York (Journal A. M. A., April 12, 1924), that convalescent measles serum, plasma or whole blood has definite value in the prophylaxis of measles. It can be used to produce complete passive immunity if injected within the first four or five days after exposure, and a mixed form of immunity if injected in larger doses after the fifth day. It can be injected in small doses after the fifth day of exposure, to modify the character of the disease rather than to prevent its development. If such an attack develops, the immunity will probably be permanent. The blood plasma or serum of recovered cases, such as that from brothers and sisters and also of adults who have had measles in childhood, can replace convalescent serum if used in larger amounts. With the increasing number of days of exposure, larger doses of convalescent serum have to be used when it is desired to produce complete protection. The dose of serum during the first four days of exposure is 2.5 c.c.; during the fifth and sixth day, 5 c.c., and during the seventh and eighth days, 7.5 c.c. To influence the type of measles so that a modified attack of the disease will develop, the dose is from 2.5 to 3 c.c., injected from the fifth to the tenth day after exposure. These doses are calculated for children 3 years of age; they should be proportionally higher for older children

and for adults. A quick, simple and convenient method, which can be used with ease both in hospital and in private practice when prepared convalescent serum or plasma is not available, is to inject intramuscularly whole blood, citrated or not citrated, in double the amounts recommended for serum. Complete passive protection with convalescent serum or plasma has its field of usefulness in protecting the very young and feeble children and those suffering from rickets, tuberculosis, diphtheria and whooping cough. Also during the cold seasons of the year, when catarrhal conditions prevail and there is danger of pulmonary complications, such complete immunization is often indicated. In private practice, however, in dealing with normal healthy children who have been exposed to measles, as well as in some institutions taking care of healthy, robust children, it will be generally more desirable to use convalescent serum, the serum of recovered cases or adult serum, so as to obtain a modified and mild form of the disease. A fairly permanent immunity will thus be established, rather than a temporary protection for a short period of time. In certain institutions, founding asylums and hospitals, the indications are to stamp out the outbreak of measles by completely protecting the exposed and nonimmune children with convalescent serum. A supply of convalescent serum or plasma can be obtained and kept on hand, if coordinated efforts are made between physicians and health authorities so that donors could be directed to places, like hospitals, where the personnel would be capable of taking the blood and preparing the serum. Of 102 nonimmune children injected after exposure to measles for varying periods of time, ninety-two were completely protected, seven developed modified measles, and two developed typical measles. Of the two, only one child was injected with convalescent plasma before the fifth day of exposure. One child was protected for twenty-eight days, but developed measles after a second exposure. Of fifty-eight additional children injected in two institutions, twenty-three developed mild

measles and four typical measles. These four children were injected with 3 c.c. of a thirty-five day convalescent plasma. A larger dose of this preparation or the same dose from a more recent convalescent would most probably have prevented the development of the typical form. Of thirty-seven control children who were not injected, seven developed typical measles and only three a mild form of the disease.

A Scarlet Fever Antitoxin

George F. Dick and Gladys Henry Dick, Chicago (Journal A. M. A., April 19, 1924), have shown that the streptococci which cause scarlet fever produce a toxin, and that this toxin, when injected into susceptible human beings, produce nausea, vomiting, general malaise, fever and a scarlatinal rash. Used in high dilutions, the toxin gives a skin test for susceptibility to scarlet fever. In more concentrated solutions, it can be used in preventive immunization. The blood serum of persons immunized with the toxin and of patients convalescent from scarlet fever contains an antitoxin that neutralizes the toxin. This has been determined by means of the skin test. A scarlet fever antitoxin has been obtained by immunizing a horse with scarlet fever toxin. This antitoxin may be concentrated by the methods employed for concentrating other antitoxin serums. The therapeutic value of the antitoxin can be determined only when the results of its use in a large series of carefully controlled cases are available.

A Case of Serum Sickness Following the Administration of Toxin-Antitoxin Mixture.

The case cited by H. Merriman Steele, New Haven, Conn. (Journal A. M. A., April 19, 1924), was that of a boy, aged 5½ years, who was brought to him for immunization against diphtheria. The family history was essentially negative, and was good. The patient's history likewise was negative. He had never had horse serum, antitoxin or any of the various vaccines administered. For obvious reasons Steele advised immunization without the test. Consequently,

he was given the first dose the same afternoon. There was no reaction, either local or constitutional. The second injection was given the following week and was followed by a slight area of redness surrounding the point of puncture, but no swelling or discomfort more than slight itching. This had disappeared at the end of the week when the boy appeared to receive his third and last treatment. The last injection was given at 3 o'clock in the afternoon. The child was taken home, had a light supper, and was put to bed, not feeling well. At 8 o'clock his mother's attention was called by his noisy, rapid breathing, and soon he had a distinct shaking chill of the adult type. Although his temperature was not taken, his mother reported it as high. Until midnight the noisy, rapid respiration continued, and he had two more severe chills. There was no vomiting or nausea, nor were his bowels affected. He passed through a very restless, uncomfortable night; he complained that he was hot and tired; that his left arm (the last injected) and left leg "hurt," and that there was constant itching and burning of the whole body. At 7 o'clock in the morning the rash was first noticed. In the afternoon the temperature was 102, the pulse full and regular. Respirations were normal. He was still decidedly prostrated, apathetic and uncomfortable; he complained of itching and of a little pain in the left ankle. From the neck to the toes the patient had a perfectly typical maculopapular rash. The neck and face escaped absolutely until the next day, when there was a slight blotching of the cheeks and chin. On the second day, the temperature and rash gradually faded, and there were no symptoms more than a falling off in appetite and rather marked languor. On the third day he was up and outdoors engaged in his regular play. The rash had faded, and he was considered recovered. A 3 L plus dose was used in this case, which contains much more toxin and a corresponding larger amount of bacterial protein than Dr. Park's new formula, which is designed to avoid any severe bacillus protein reaction,

Eye, Ear, Nose and Throat

J. P. Matheson, M. D., Dept. Editor.

Spasmodic Diplopia

George H. Hyslop, New York (Journal A. M. A., April 12, 1924), cites seven cases in which a transitory diplopia occurred which he prefers to term spasmodic diplopia. The symptom occurred quite independently of use of the eyes, was sudden in onset, and would continue for a few seconds, or at times a minute or two. Digestive disturbances of one sort or another were present in every instance. Certain symptoms and signs pointed to the fact that the autonomic part of the vegetative nervous system was overactive. Spastic constipation, gastric unrest and eructations, respiratory arrhythmia, strongly positive oculocardiac reflex responses, hyperhidrosis, vasovagal attacks, esophagospasm and frequency of urination are mentioned. The predisposing factors in the women were of a sort that are often associated with an instability or hyperexcitability of the vegetative nervous system. The treatment of the various cases is difficult of analysis because of the diversity of measures used. In one instance the cause of the symptoms seemed to be excessive consumption of coffee, and discontinuing the beverage was sufficient to bring about a cure. From the clinical point of view, the diplopia described in this series of cases has a diagnostic significance. Because of this symptom, one patient was considered by his physician to be suffering from macute epidemic encephalitis. A second patient had been refitted with glasses without any benefit, and a third patient was about to consult an ophthalmologist. Another lesson from these cases is the importance of a complete and accurate history.

Ossification In a Chalazion

The case seen by Walter Scott Franklin and Frederick C. Cordes, San Francisco (Journal A. M. A., Feb. 16, 1924), clinically had all the characteristics of

a chalazion with a history of seventeen years' duration. The question of trachoma can be ruled out, as both conjunctivae were negative, no line of atrophy being present. Microscopic examination showed true bone formation. An osteoma can be eliminated, the condition not being congenital but having developed following a "stye." It is assumed that this was an old chalazion in which the granulation tissue during a period of years took on the properties of ossification. Search of the literature failed to show a similar case.

Orthopaedics

Alenzo Myers, M. D., Dept. Editor

Of thirty cases observed in the Mayo Clinic and reported on by Melvin S. Henderson, Rochester, Minn. (Journal A. M. A., March 22, 1924), the tibia was involved in sixteen, the femur in ten, the fibula in two, the ulna in one, and the second metacarpal in one. Trauma might reasonably have been considered a factor in seven, and infectious diseases in eight. Serologic tests for syphilis and many provocative tests were made, with negative results in all but one. In eight cases there was suppuration, but in only one case a history of necrosis of bone. All the patients had pain; in the majority it was graded 2 on a basis of 1 to 4. Thirteen patients were not operated on; conservative measures, such as the application of heat, and diluted mercurial ointment, were carried out. Three were relieved permanently; one was relieved, but had a recurrence; nine were not traced. Seventeen patients were operated on, the operation consisting either of "guttering" the bone by chiseling off the cortex, or drilling multiple holes through both cortices. In both procedures the object was to get a better blood supply into the hard eburnated bone and to the medulla. Nine patients are known to have been relieved; one was not relieved; two were relieved temporarily but symptoms recurred, and five were not traced. Treatment is usually surgical, although es-

sentially conservative. The practice of resecting the involved area, or amputating, is condemned by Henderson. Two procedures have been used in the clinic, guttering of the bone, and trephining with multiple drill holes, the latter extending through both cortices. Relief is brought about by the improved circulatory condition, the pain probably being caused by the inability of the blood to flow through this dense bone. Some of the patients in the series failed to obtain relief by the guttering, and were relieved by trephining, while the opposite has been true of others. All foci of infection, such as bad tonsils or septic teeth, should be eliminated.

News Items

Dr. Edward Julian Moseley, Sr., died at his home in Richmond, Virginia, on April 22. He was born in 1838; was graduated from the New York University Medical College in 1860; he was a Confederate soldier, and for more than a generation a leading physician in his city.

Dr. William S. Gordon died at his home in Richmond, Virginia, on April 24. He was born in 1858; was graduated from the Medical College of Virginia in the class of 1879; he had held a professorship both in the Medical College of Virginia and in the University College of Medicine and had been for many years one of the chief diagnosticians of Richmond.

The Baltimore section of The Surgical Research Society was in session in Richmond on April 25-26.

Dr. Wm. Fewell Merchant, Manassas, Va., age 55, died Feb. 20.

The South Carolina Nurses' Association held its seventeenth annual convention at Columbia April 29 to May 2. About seventy-five delegates were in attendance representing the different sections of the state.

Dr. Julian Doles, Ivor, Va., age 59, died Feb. 28, at Portsmouth.

The Mary Black hospital, Spartanburg, S. C., is now being enlarged by the addition of 60 rooms.

Richland County, S. C., has been authorized to issue \$300,000 bonds for the county hospital.

The Virginia-West Virginia section of the American College of Surgeons was in session in Richmond on May 2-3.

Publications Received

The Surgical Clinics of North America (Issued serially, one number every other month)—Volume IV, Number II (Mayo Clinic Number—April 1924), 295 pages with 88 illustrations. Per Clinic year (February, 1924, to December, 1924). Paper \$12.00; Cloth \$16.00 net. Philadelphia and London: W. B. Saunders Company.

Abt's Pediatrics—By 150 specialists. Edited by Isaac A. Abt, M. D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totalling 8000 pages with 1500 illustrations, and separate Index Volume free. Now ready. Volume III containing 1051 pages with 223 illustrations. Philadelphia and London: W. B. Saunders Company, 1924 Cloth, \$10.00 per volume. Sold by subscription.

This volume contains twenty-seven contributions from various authors, which deal with Pediatric diseases and conditions. The first chapter by Clemens Pirquet of Vienna is an exposition of the "Nem" system of Nutrition. Other chapters deal with other equally important features.

The Circulatory Disturbances of the Extremities, including Gangrene, Vasomotor and Trophic Disorders by Leo Buerger, M.A., M.D., New York City. Octavo volume of 268 pages with 188 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, \$8.50 net.

No surgeon or general practitioner is spared the annoying problem of circulatory disturbance of the extremities with its sequel of aches, pains and death to the part if not to the individual. Dr. Buerger has covered the field most thoroughly and has made as perplexing a problem as this very clear and comprehensible.

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Following the Acute Infections

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Southern Medicine and Surgery

VOL. LXXXVI

CHARLOTTE, N. C., JUNE, 1924

No. 6

TRANSACTIONS TWENTY-SIXTH ANNUAL SESSION OF THE TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA.

**Business Session,
Thursday, February 21, 1924.**

The meeting was called to order by the President, Dr. Laughinghouse, who then called for the report of the Board of Councilors. The full report not being available, a summary of it was given by the Secretary, as follows:

The names of members elected to the Executive Council to succeed those councilors serving only a one year term were announced.

The Council accepted the invitation of Richmond, Virginia, to meet there in 1925, and makes that recommendation.

Dr. White moved that the number of papers to be put on the program be limited to thirty, which was unanimously approved by the Council. Dr. White also moved that any man appearing on the program who does not come shall be debarred for two years thereafter from appearing on the program, which motion was also carried.

Twenty-four applications for membership were passed upon and approved. About six members have resigned during the year. The probable balance in the treasury is about four or five hundred dollars.

Dr. Townsend, editor of *Southern Medicine and Surgery*, appeared before the Council offering to continue his journal as the organ of official publication for the Association for another year, which offer was accepted. Heretofore that journal has been going to the members of the Tri-State at a cost to the Treasurer of \$1.50 a year, but the Council thinking that not enough moved unanimously that the Treasurer of the Association be authorized to pay the edi-

tor of *Southern Medicine and Surgery* \$2.00 a year per member. The Council makes that recommendation.

A motion to take up the recommendations of the Council section by section was defeated, after which Dr. White moved to accept the recommendations of the Council as a whole. Dr. White's motion was seconded and, after some discussion, adopted.

The following nominations for president were offered:

Dr. F. H. McLeod, of Florence, by Dr. A. E. Baker.

Dr. E. W. Carpenter, of Greenville, by Dr. D. L. Smith.

Dr. McLeod was elected by a vote of 44 to 30.

The following were nominated for vice-presidents:

South Carolina: Dr. E. W. Carpenter, of Greenville, and Dr. D. L. Smith, of Spartanburg.

North Carolina: Dr. C. S. Lawrence, of Winston-Salem, was nominated by Dr. J. T. Burrus, of High Point; Dr. B. C. Nalle, of Charlotte, was also nominated.

Virginia: Dr. Garnett Nelson, of Richmond.

Doctors Carpenter, Lawrence and Nelson, were elected by votes of 42 to 11, 29 to 24, and 52, respectively.

Dr. James K. Hall was unanimously re-elected as Secretary-Treasurer.

Dr. McLeod, the newly elected President, was presented to the Association by Dr. Laughinghouse, and spoke as follows:

I thank you most sincerely for the honor that you have conferred upon me. This is the highest gift that you can confer, and there is no one who could appreciate it more than I. The Tri-State Medical Association is a wonderful medical organization. It stands for all that is best and scientific, and it has a wonderful influence. I thank you most heartily for this honor, though I

would feel very incompetent and greatly handicapped to accept this office were it not for the strong arm of our Secretary, Dr. Hall, upon whom I may lean with confidence, I am sure. Again I thank you.

The business session then adjourned.

Dr. Rolph E. Hughes of Laurens, S. C. was present at the meeting but did not arrive in time to be present at the dinner.

There being no further business the meeting adjourned.

Transactions of the Meeting of the Ex-Presidents Society of the Tri-State State Medical Association at

High Point, N. C., February 22, 1923.

At the annual dinner of the Ex-Presidents of the Tri-State Medical Association at High Point, N. C., the following gentlemen were present: Dr. S. S. Gale, Roanoke, Va., Dr. J. Howell Way, Waynesville, N. C., Dr. J. H. McIntosh, Columbia, S. C., Dr. D. Furman, Greenville, S. C., Dr. J. A. White, Richmond, Va., Dr. A. Anderson, Raleigh, N. C., Dr. Stuart McGuire, Richmond, Va., Dr. W. W. Fennell, Rock Hill, S. C., Dr. A. E. Baker, Charleston, S. C., Dr. Dave Tayloe, Washington, N. C., Dr. R. C. Byran, Richmond Va., Dr. H. A. Royster, Raleigh, N. C.

Dr. Way moved that Dr. McGuire and Dr. Bryan continue in office, seconded by Dr. Royster. Motion carried.

Dr. Way suggests that every Ex-President regard it as a moral obligation to come to the meetings and bring a friend; and if "anything" is left over to bring that also.

Moved by the Secretary and seconded by Dr. Tayloe that the Ex-President's Dinner be a Dutch treat. Motion carried.

The Chair suggests that the Ex-Presidents have a paper of five minutes to be presented by one of the members and discussed by all, discussion to be limited to two minutes that "Arteriosclerosis" be the subject for the next meeting. Dr. Tayloe, kidney, Dr. Royster, senile gangrene, Dr. Way, in relation to tuberculosis, Dr. Baker, arteriosclerosis of the uterus, Dr. Furman, cardiac, Dr. Fennell, high blood pressure, Dr. Anderson, brain, Dr. White, eye, Dr. Bryan, prostrate, Dr. McGuire, thyroid.

A STUDY OF ONE HUNDRED CASES OF GALL BLADDER DISEASE OPERATED UPON.

C. S. Lawrence, M.D., Winston-Salem, N. C.

The gall bladder is a frequent site of disease that may be manifested in various ways, depending upon the extent of the pathological process and the length of time the organ has been battling against the invading organism. For a number of years a great deal of work has been done and still going on to show the exact cause and the avenues of approach of the causative agent producing disease, not only of the gall bladder but similar infections found in all the poorly drained sacs and cavities of the body; such as the gall bladder, kidney pelvis, appendix and sinuses of the face and head. All agree that living microorganisms are necessary to produce the pathological process, but there is a division of opinion as to the channel of approach, some favoring the lymphatic route and others the blood stream.

The work of Rosenow and others have shown beyond doubt that such infections start and are fed from a focus in another part of the body, whether they travel by the blood or lymph stream, the result is the same.

In this series of one hundred cases operated upon at the Lawrence Hospital the following focal infections were noted. All had a long standing dental infection, forty-two of the cases had had typhoid fever, twenty-six cases had pus in the crypts of their tonsils, while a less number had foci of infections in other parts of the body. There was not one case in the series where focal in-

*Read at the Greenville meeting of the Tri-State Medical Association, Feb. 20-21, 1924.

fection could not be demonstrated. Of the one hundred cases fifty-eight had stones and forty-two no stones. There were in the series four acute cases with pus in the gall bladder. Two cases abscessed around the gall-bladder with gall stones in the abscess cavity, well walled off. One case of acute rupture with free bile in the abdominal cavity and general peritonitis and two cases of cancer.

Cholecystectomy was performed in sixty-six cases with two deaths, mortality 3 per cent. Cholecystostomy in twenty-six cases with four deaths, 15 per cent. Choledochotomy in four cases with one death. There were two cases of cancer head of pancreas with distended gall-bladder and deep jaundice, gall-bladder drained, both died. Two cases general peritonitis, rapid opening and draining, both died. Of the one hundred cases operated upon eighty-nine recovered and eleven died. Total mortality of 11 per cent.

Cause of Death.

Cholecystectomy:

1. Mrs. K. Age 63. Morphine habit twenty years. Stones in gall-bladder. Small contracted gall-bladder and appendix removed. Died tenth day with marked diarrhea and distention.

2. Mr. F. Age 28. Suffered seven years with gas and indigestion. Chronic cholecystitis and appendicitis. Gall-bladder adherent to hepatic flexure colon and duodenum. Appendix adherent. Gall-bladder and appendix removed. Died twelve hours later, shock. No autopsy.

Cholecystostomy:

1. Mrs. G. Age 65. Acute, pus. Died fifth day of general peritonitis. Very ill on admission.

2. Mrs. B. Age 58. Moribund. Rapid opening and draining. Gall-bladder distended and gangrenous. General peritonitis. Died twelve hours later.

3. Mrs. C. Age 66. Empyema gall bladder, many stones. Rapid opening and drainage, removed stones. Died 17th day. Septic broncho pneumonia.

4. Mr. J. Age 53. Acute cholecystitis and appendicitis. Gall bladder full

of pus, gangrenous. Appendix, acute. Gall-bladder drained. Appendix removed. Died 14th day, septicemia. Cancer Pancreas. Deep jaundice. Cholecystostomy.

1. Mr. S. Age 49. Deep jaundice, distended gall-bladder, no stones. Pancreas hard and nodular. Died 11th day.

2. Mr. S. Age 36. Deep jaundice. Large distended gall-bladder. Hard nodular pancreas. Large liver. Gall-bladder opened and drained. Died 4th day.

Rupture and General peritonitis. Free bile in Abdomen:

1. Mrs. L. Age 42. Many attacks past fifteen years. Entered hospital, moribund. Rapidly opened and drained. Much bile stained fluid. General peritonitis. Died twelve hours after operation.

2. Mrs. M. Age 58. Ruptured gall-bladder. Large abscess under liver containing many stones. Moribund. Rapid opening and drainage. Died twenty-four hours later. Stones in common duct. Deep jaundice.

Mrs. B. Age 25. Previous cholecystostomy. Biliary fistula. Two stones impacted in common duct, many dense adhesions. Stones removed, common duct drained. Died fifth day from hemorrhage. Constant oozing since operation.

The mortality in the cases of cholecystostomy. Biliary fistula. Two stones seen, we have taken a long chance and given some of the acute cases the benefit of drainage. It is my opinion that lives have been saved by early intervention that would otherwise have died. We do not, however, advocate immediate operation in all acute cases.

Symptoms: This series of cases has given the usual symptoms and history of long standing gaseous indigestion so well described in the text books and in the literature. It is the irregular or bizarre case that has given us concern in the diagnosis. It has been our experience that those cases dropping out of the regular line symptomatically have been cases suffering with disease of other organs, either complicating gall-bladder disease or existing independently.

Two Cases in Point

Mrs. B. Age 52. Admitted suffering with indigestion, pain in back, much gas after food. Had frequency in urination. Up several times at night. Sour stomach, heart burn and took soda daily. She was decidedly jaundiced and had bile in the urine. There were many pus and red blood cells in the urine. X-ray showed stone in right kidney pelvis 2 c.m. long by 1 c.m. wide. Also distorted duodenum with gall-bladder shadow. No six hour residue. A diagnosis of stone in pelvis of right kidney and gall-bladder disease was made and confirmed at operation, plus duodenal ulcer. Stones were found in the gall bladder.

Mrs. P. was admitted. Chief complaint. Painful micturition and pain in back. She gave history of long standing indigestion and attacks of colic. There were many pus and blood cells in the urine. The bladder and urethral orifices were much congested. X-ray showed two stones in gall-bladder. Pyelogram showed right kidney markedly ptosed, ureter kinked with a pelvic capacity of 40 c.c. Operation; the gall-bladder and appendix were removed, later the kidney suspended. Good recovery.

After the history and physical examination we think the next most valuable aid to the diagnosis is the X-ray. Thirty-one consecutive cases from our X-ray laboratory records confirmed by operation show the following: ten cases stones were found, five of the ten were diagnosed by the X-ray. Twenty-one showed gall-bladder disease without stones, sixteen of which were diagnosed by the X-ray, leaving five of the thirty-one cases that did not show evidence enough to make the diagnosis. Dr. G. C. Cooke the roentgenologist of the Lawrence Clinic has outlined the following points which he thinks are most valuable in making a roentgenologic diagnosis of gall-bladder diseases.

In studying the alimentary system for the purpose of detecting gall-bladder disease by roentgenologic examination, as for detecting any other lesion, a careful history of the case is taken by the

radiologist and the parts which are most suggestive of abnormality are given more especial attention, and before an impression is made, abnormality of the unaffected organs are ruled out as far as possible. The fleuroscopic findings in gall-bladder disease unassociated with disease of organs in juxtaposition are more important and instructive than are plates. In this condition, more than any other, if one notices during the filling of the stomach, there is frequently a tendency to hourglass formation which is gradually overcome by completely filling the stomach. The constriction is more often persistent in the presence of stones, but even here, if no gastric lesion is present the fusiform constriction can be relieved by belladonna, until full physiological effects are produced.

When the stomach is studied and found to be free from gross lesions, there are seven points of extreme importance with reference to the duodenum as indicative of gall-bladder disease. 1. The cap usually fills readily, but is spastic as indicated by its rapid disappearance and small numerous peristaltic waves, which in a film usually gives an indistinct margin to the side adjacent to the liver. 2. Where there is ptosis of the stomach with a high duodenum held close under the liver density, adhesions are suggestive. 3. Spasm and adhesions are suggested by a persistent smooth small cap and increased peristalsis of the pre-pylorus. 4. A very sharp pointed duodenal cap, persisting, especially when the apex is directed to the left and held parallel to the lower border of the liver shadow, adhesions are most likely present. 5. Occasionally the greater curvature of the stomach next to the pylorus will be projecting upward to the right, sometimes higher than the pyloric sphincter and more or less immobilized. 6. If the six hour meal has reached the hepatic flexure of the colon, adhesions between that structure and the gall-bladder or liver are suggested by some retardation at that point or by it being held in close proximity to the duodenal area. 7, and most important of all

findings is the presence of any of the above, with definite tenderness when pressure is made directly over the pyloric area, or upon attempt to separate the duodenal shadow from the liver density by placing the tips of the fingers between the two.

When gall stones are present and are of sufficient density to cast a shadow there is usually no occasion for error, but rarely there is difficulty in differentiating the shadows from urinary calculi, either from their position overlapping the kidney area, or due to ptosis, falling in line with the ureter low down, and in such positions one should have a ureteral catheter passed. Sometimes calculi are of such size and rarity that they will cast a shadow of less density than the surrounding area, much simulating an air bubble.

A point to be remembered is that gall bladder disease rarely if ever is responsible for a six hour gastric detention, and when such is found in the absence of a gross lesion at the pylorus it is more apt to be due to spasm secondary to appendicitis.

The kidney must receive special attention in the diagnosis. We have found pyelitis producing pain and discomfort, in addition to that produced by the gall-bladder disease, in 20 per cent of the cases. We have also noted that the cases returning to the Clinic for treatment after operation often have a pyelitis and when cleared up the patients enjoy good health.

In forty-six of our cases the appendix was removed because it showed evidence of having been diseased or was acutely affected at the time.

Five of the cases had disease of the stomach and duodenum that required surgical correction at the time, viz., three duodenal ulcers, one stomach and one duodenal fistula to gall bladder. The pelvic organs are a frequent source of trouble along with gall-bladder disease and should receive attention either at the time of the gall-bladder operation or later. In this series hysterectomy was performed twice, once for myoma and once for chronic pelvic inflammatory disease. In two cases the round liga-

ments were shortened to correct retro-position of the uterus. In one case a large cystic ovary was removed and in one case pyelotomy for removal of stone, all at the time of the gall-bladder operation. We have never lost a case or noted ill effects that we could contribute to too much surgery at one sitting. This point should be guarded, however, and the patients vitality kept constantly under watchful, intelligent care so that the operator may advance or retreat at will.

Duration of Symptoms:

Average age of this series was 43 years. The longest time that any of our cases had suffered was forty-seven years, the shortest, one year. Average for all eleven years. Forty-three of the cases were jaundiced, ranging in density from a deep yellow skin with thick yellow urine to a slight yellowish tinge of skin, with trace of bile in urine. Hemorrhage has not occurred in but one of the jaundiced patients. A woman with impacted stones in the common duct and acutely ill. Died from hemorrhage (constant oozing) eight days after operation. The jaundiced cases are given an abundance of water and carbohydrates. The operation is performed when the clotting time is at or below 8 m. Calcium chloride intravenously has been used with good result by Walters of the Mayo Clinic.

Twenty-two of the series were male and seventy-eight female. Ninety-nine white and one colored, gall bladder disease among the colored race is not common in my experience. Seventy-seven of the patients were fat and twenty-three lean, seventy of the cases had borne children. Occupation: Housewife 78, farmers 12, laborers 3, carpenters 2, tailors 1, merchants 2, ministers 1, railroad man 1.

Discussion.

As much bile is secreted in twenty-four hours as there is urine, 900 to 1,200 c.c. (W. H. Mayo). The gall-bladder only holds 30 c.c., it could hardly be of much assistance as a reservoir for the storage of bile, we have noticed a constant difference in the consistency of

gall-bladder bile to that of common duct bile. The gall-bladder bile being much thicker and darker in color.

Harer, Hargis and Van Meter, after an exhaustive study of the function of the gall-bladder come to the following conclusion:

1. The function of the gall-bladder is that of a concentrator of bile through the lymphatic system.

2. That the gall-bladder is emptied of its contents, if it is emptied at all, through the cystic duct, by pressure of adjacent, distended and congested organs during digestion, and by milking action of the duodenal peristaltic waves, and that the rhythmic contractions of the gall-bladder are of no importance in this respect.

We believe that after the removal of the gall-bladder, this concentration function is taken up by the hepatic and common bile ducts. Evidence of this hypothesis is shown in the fact that these ducts become much dilated after the removal of the gall-bladder. (Judd & Mann). Deaver has called attention to dilatation of the bile ducts in cases of gall-bladder disease. This condition has been noticed in a number of the cases in this series, especially in that type of small contracted gall-bladder. This type of gall-bladder has also given us our best ultimate results after operation. They usually come to us after many years of suffering in which they have passed through several acute attacks. It would seem that nature had put the gall-bladder out of business, the patient established an immunity to the infection and the dilated gall ducts taken up the function previously performed by the gall-bladder. A diseased gall-bladder therefore should be removed early so that the patient may be saved many years of suffering.

Technique of Operation:

The patient is placed flat on the table, a right rectus incision is made from the costal margin well down to the right of the umbilicus to give good exposure. After a careful check of all the abdominal contents by the palpating hand, the field of operation is well packed off and retracted, pads arranged so that they

will not have to be rearranged until the operation is finished. Cholecystectomy: The gall-bladder is grasped at the fundus by a six-inch Kelly curved clamp and traction made so that adhesions are made taut. They are snipped with the point of scissors until the gall-bladder is free from the colon, duodenum, stomach or any other organ that it may be adherent to. The cystic duct is sought for and exposed from base of gall-bladder to its junction with the common duct. This we feel is the most important step in the operation, so important is this step that could we not do it and be able to demonstrate the hepatic, common and cystic ducts in their relations we would not remove the gall-bladder and resort to the next best method of treating it by cholecystostomy. My method of exposing the cystic duct is as follows: Grasp the pouch of Hartmann with a Kelly clamp, making traction with the thumb and second finger on the clamp, the index finger in the triangle of Calot, strip the peritoneum and areola tissue from the cystic duct working from below upward to the gall-bladder and down to the common duct, the blood vessels running in a longitudinal direction with the common duct will aid in topographical orientation. When the cystic duct is dissected and the triangle of Calot is outlined the clamp is applied from below upward. We made one mistake in our early experience, by not using this precaution, and injured the hepatic duct. We resolved then that the accident would never happen again, we will leave the gall-bladder in first.

After the cystic duct is exposed and recognized by my assistant and myself it is clamped with a Moynihan clamp, cut and doubly ligated with number one chromic catgut, clamp removed. The cystic artery sought out, clamped in a similar manner, cut ligated and clamp removed. The gall-bladder is then dissected from the liver leaving a margin of peritoneum through which a few interrupted catgut sutures close the raw surfaces on the liver and control oozing of blood from small anastomosing vessels coming from the right and left

branch of the hepatic artery. We close the abdomen in layers, a drain of rubber tissue and gauze (cigarette) to the stump of the cystic duct which will soak the first layers of dressing with a sero-sanguineous and often bile tinged discharge during the first twenty-four hours. We remove it at the end of forty-eight hours. Immediately after returning to bed from the operating room we give the patient 1000 c.c. salt solution per rectum with 4 c.c. digital. This seems to stabilize the heart and prevent shock. We give liquids, except milk, by mouth as soon as the patient is able to swallow. When vomiting or hiccough is troublesome we resort to the stomach or duodenal tube with great relief. When the stomach tends to fill rapidly and vomiting persistent we install the duodenal tube for twenty-four to forty-eight hours or even longer if necessary. Life has been saved by this means.

Cholecystostomy: The gall-bladder is opened at the fundus and explored; its contents emptied, a fourth inch rubber tube with an opening near the end is placed well down to the cystic duct. A purse string suture of number one chromic catgut surrounds the tube turned in by interrupted suture of the same material. One soft cigarette drain is placed under the gall-bladder and the abdomen closed. The tube is connected to a bottle at the side of the bed, the cigarette drain is removed on the third to fourth day and the tube about the tenth day.

Results

In following our cases we find that those cases that have had their gall-bladder removed have enjoyed better health than those that had drainage, and the gall-bladder left in.

Conclusions.

1. Cholecystectomy in gall-bladder disease is the operation of choice.

2. Disease of other organs must be diagnosed, treated and cured before the patient is allowed to resume his occupation.

3. Disease of the gall-bladder may be arrested or prevented by the removal of infection.

4. The function of the gall-bladder is that of bile concentration. This function is taken up by the bile ducts after the gall-bladder is put out of business.

5. Early removal of a hopelessly diseased gall-bladder will save the individual of years of suffering and add much time to the span of life.

6. Diagnostic tripod, history, physical examination and X-ray and the laboratory, the plumb bob which makes the diagnosis up-right.

Discussion.

Dr. Stuart McGuire, Richmond, Va.

I would like to correct one point. Dr. Lawrence said I had reported two thousand, but it was only one thousand. My mortality averaged six per cent. Those cases covered a period of twenty years. My highest mortality was in the cases with stones in the common duct; my lowest with cholecystectomy. His mortality in a hundred cases was due to a run of bad luck. Forty-three per cent of jaundice in one hundred cases shows that the cases came to him late.

Dr. Lawrence discusses the value of the X-ray, and I shall extend this discussion, by bringing most of the X-ray men to their feet after I conclude, by saying that I do not attach much value to the X-ray report. I have most of my cases X-rayed, but not so much to find gall stones as to exclude something else. If the clinical picture indicates gall stones and he reports them, he only confirms my findings. The X-ray does not show gall stones in seventeen per cent of the cases.

I was told that hyperacidity always attended gall stones and therefore I do not rely so much on the gastric findings, because I find hyperacidity often present. Therefore I rely on the clinical history. I believe I had about seventy-five per cent of stones and twenty-five per cent of inflammation of gall bladder without stones. When I read the paper I was criticised for having such a large percentage of cases without stones at operation, but the worst cases I had operated on, with symptoms most marked and gall bladder most grossly diseased, had no stones.

I differ with Dr. Lawrence about mul-

tiple operations. If in doing pelvic operations for fibroid uterus or other condition I find gall stones present, I very seldom attack the gall bladder at that sitting; and if in operating on the gall bladder I find some other condition requiring operation I usually postpone it to a second sitting.

My experience covering a period of twenty years shows me that the removal of the gall bladder gives the lowest mortality and the best results. So far as my experience goes, the loss of the gall bladder does no more harm than the loss of the appendix.

Dr. J. T. Burrus, High Point, N. C.

Just in this connection I want to bear testimony to the splendid work that Dr. Lawrence has done and is doing now with surgery of the upper abdomen.

As to the value of the X-ray, we almost invariably make an X-ray of these patients that have clinical symptoms of gall stones, but it is our experience that a very small percentage of these stones have been shown, in our hands. Therefore I believe that these distorted waves or obstructions in the intestinal tract as shown by the X-ray should be thought of most likely as coming from the gall bladder, the pylorus, or the appendix, and I do not believe that we could interpret some distortion of the normal course of the alimentary tract as being due to gall bladder disease altogether.

I think the question of how much operating to do depends altogether upon the patient. If we get the patient early, if the patient is well prepared, if he has a very high resistance, we can go on then and do quite a bit of surgery and be in the safety zone, but as a rule the majority of cases with gall bladder disease that come to us are in extremis and many times are beyond anything more than to do just as little as you can do and quit, in the interest of the patient.

In this connection, I do want to thank Dr. Lawrence for this paper and say to you that I know he has done a lot of fine work along this line.

Dr. R. L. Pittman, Fayetteville, N. C.

I noticed that Dr. Lawrence spoke of losing one patient from diarrhea on the

tenth day. I recall an experience I had some time ago, the case of a lady with a badly infected gall bladder. I lost that patient about the eighth or tenth day from an uncontrollable diarrhea, and I think it was my fault. I think there was an error in the technic of the operation, and I have tried to prevent it since that time in this way. In removing the gall bladder I think the point of first importance is to locate the duodenum. Next locate the cystic duct and follow it out a short distance. First put a clamp around the cystic duct. You have then cut off the contents of the gall bladder from the duodenum. You have a gall bladder that is evidently diseased and that contains more or less highly infective material, and by forcing that into the duodenum, which is already irritated, you are likely to set up a highly infectious enteritis followed by diarrhea. It is evident that if you force the contents of the gall bladder into the stomach and intestines you are going to get the stomach and intestines saturated with bile. These patients vomit more than almost any other class of patients. That vomiting can be prevented, to a great extent, by keeping your hands off the gall bladder until you have occluded the cystic duct.

I do not think it is a very good idea to operate on any case with jaundice if it can be carried over. You can use a five per cent solution of calcium chloride and you can do a great deal to relieve jaundice by using this intravenously. It prevents the oozing from the cut surface of the liver.

As to the question of colored people, I can recall two colored people who came to operation. They were women. They presented themselves for constant dull pain high up in the upper abdomen. Both cases proved to have stone and cancer. They really came for the cancerous condition and not for the gall bladder condition.

Dr. Lawrence, closing the discussion:

In regard to the X-ray, I am fully convinced that the X-ray is a very important aid in the diagnosis of gall bladder disease, not only where stones are

present but in disease of the gall bladder itself. We are now making pictures that show the gall bladder shadow right along. On glass plates with half a second's exposure the gall bladder frequently shows and is confirmed by operation. Of course, I have two men with me, and we follow these patients all along. The roentgenologist knows the history and the physical, and I know the history and the physical, and we put more dependence on those, but there is no question but that the X-ray is showing up more and more pathological conditions in the cavities of the body.

In regard to multiple operations, we would not dare to go ahead and do additional surgery on the patient unless we were absolutely sure the patient could stand the removal of the appendix or the removal of a cystic ovary or a myoma or a fibroid uterus. That is kept constantly in mind.

There is a point to which I wish to call especial attention, and that is, in all our work, whether urological, medical, neurological or what not, cure the patient. A patient can have gall bladder disease, appendix disease and other disease all at the same time, and if you do not cure them all he is not well. Take the patient I had with kidney stone, gall bladder disease and duodenal ulcer. If I had cured one and not the other she would not have been well, and would have been dissatisfied. No matter how brilliant I do the work, the patient is looking for results. We operate on these patients for outstanding pathological conditions and think they ought to be well, whereas they may have a fallen arch or diseased tonsils or bad teeth or vulvovaginal abscess or something else and not be well. We should keep on treating these patients until they get well, as evidenced by rosy cheeks, good appetites, sleeping well and getting back to work.

In regard to walling off the contents of the gall bladder, as suggested by Dr. Pittman, I do not know. It seems to me unwise not to get hold of the gall bladder first. If you make a mistake and injure the hepatic or common duct for-

ever after you are extremely cautious in clamping the cystic duct before you know absolutely where you are.

CYSTS OF THE PANCREAS.

By H. S. Black, M.D., Mary Black Clinic.
Spartanburg, S. C.

Pancreatic cysts might arise from either the head, body, tail of one or more of these divisions of the pancreas. In the embryo, the pancreas is within the peritoneal cavity, but as it rotates to the right, it loses the posterior peritoneum which becomes fibrous tissue, thereby making it an extraperitoneal organ. The pancreas arises from three anlagen, the dorsal, and the right and rudimentary left ventral. The dorsal gives rise to the body, tail, and part of the head and the right and rudimentary left ventral fuse to give rise to the balance of the head.

Pancreatic cysts are of two main types, the true and the false, but for clinical purposes they are best classified as retention, proliferating, congenital, hydatid, dermoid, and pseudocyst.

True retention cysts of the pancreas are believed by most authorities to be due to some obstruction of the outflow of pancreatic secretion, resulting in a retention of the fluid and a dilatation of the acini or ducts. Vicrhov describes the retention cysts of two types, namely: the one in which the ducts are dilated, and the other where the ducts becomes obstructed at its outlet and becomes distended into a cyst.

Pancreatitis is commonly associated with pancreatic cysts, but whether it is the cause or the result of the cyst, one cannot be certain. Tilger and Archibald state that the cysts are the result of obstruction to the ducts caused by inflammation of the pancreas. It has not been proven definitely that bile entering the pancreatic ducts will produce pancreatitis to such a degree as to cause formation of a cyst.

*Read at the Greenville meeting of the Tri-State Medical Association, Feb. 20-21, 1924.

The relation between infections of the gall bladder and cyst formations of the pancreas must be kept in mind, as they are sometimes associated. Saltzstein reports a case of cyst formation a few weeks after a cholecystectomy and in two of the writer's cases, gall stones were found with a history of colics for several years.

The proliferating cysts or cystic growths of the pancreas form as a result of spontaneous proliferations of the epithelial elements of the gland. There are two main types, the cyst-adenoma and the cystic carcinoma. The latter type is not common, but when present it may metastasize to the liver, spleen, peritoneum, etc., and resembles that of malignant cyst adenoma of the ovary.

Hydatid, congenital, and dermoid cysts of the pancreas are very rare and when present not only resemble similar cysts in other organs, but are usually associated with corresponding cysts. The dermoid type is the more rare, only one such case being reported.

Pseudo cysts might be formed within the substance of the gland and might be due to some degenerating changes affecting the interstitial tissue of the gland. By a pseudo cyst we usually mean a collection of fluid due to hemorrhage in the lesser sac, as a result of trauma to the upper abdomen. Such cysts usually appear from 10 days to several weeks after injury.

The presence of hemorrhage in a cyst does not necessarily mean that it results from trauma or that it is a pseudo cyst. Retention cysts might contain blood as a result of dilated vessels or as a result of the action of the pancreatic juice in the vessel wall.

Pancreatic cysts might occur at any age. They might be simple or multiple, unilocular or multi locular and of variable sizes. They are usually spherical in shape generally smooth and tense and are found as a mass near the umbilicus, usually above it and more to the left of the midline. The small cysts are usually hard and tense while the larger cysts might fluctuate. The cysts might occupy the entire abdomen even

extending into the pelvis or might rarely point to the right side resembling a hydronephrosis as in Da Costa's case. They are usually fixed but might be slightly movable especially if the origin is in the tail for the tail of the pancreas is the less fixed portion of the organ.

The cysts as they increase in size present themselves in one of three places. More frequently, they push the stomach upward and move the colon down pointing behind the gastro colic omentum; secondly, they might push the stomach down and point upward beneath the gastro-hepatic omentum; and, lastly, they might extend forward between the layers of the transverse meso-colon.

The symptoms are usually those of pressure. The occasional distress and fullness after meals result from extra-gastric pressure. There might be ascites and edema of lower extremities as the result of pressure on the portal vein and vena cava. If jaundice is present, the pressure must be on the common duct and in such cases the cyst usually arises from the head. Dreyzer and Reeve reported a case where the ureter was obstructed and Ransohoff's patient with hematuria was explained by the tumor pressing on the renal veins for following drainage the hematuria ceased.

Pain when present is fairly constant, though it may be dull or sharp and may radiate to the left but in cases where pain is present one should consider an associated pancreatitis or cholecystitis.

Glycosuria may be present and in some cases this will clear up after drainage, but when diabetes mellitus is associated, it remains and is usually the final cause of death.

In regard to diagnosis, I will only state that whenever a patient presents with a globular swelling above the umbilicus and to the left of the midline, it should be suggestive of pancreatic tumor. Some cases cannot be diagnosed except by exploratory laparotomy, but these would be few if this condition was kept in mind.

Of the methods of treatment, mere

aspiration has proven unsuccessful and should never be done blindly as there may be an error in diagnosis.

The best treatment is enucleation of the cyst, but unfortunately this can but seldom be done because of the numerous adhesions which are present, because of the danger of hemorrhage, keeping in mind the close proximity of the large veins to the cyst wall and pancreas and thirdly because of the danger of removing too much pancreas.

The safest method consists of evacuation and drainage. The cyst wall is stitched to the parietal peritoneum, the contents evacuated, the lining of the wall destroyed as much as possible and the insertion of a tube for drainage. The tube is best brought out through a stab incision and left in situ for an indefinite period or in fact until the lining cells of the walls are destroyed for as long as they remain there will be drainage. Behrand recommends after evacuating, packing the cavity with gauze for 8 or 10 days hoping in this way to destroy the cells. Should the drainage irritate the skin, it might be protected by using rubber cement in ether on it.

Recently three cases of pancreatic cysts have come under my observation, two were females and one male. The ages were 22, 45, and 72 years.

The family and personal histories were of negative value.

The chief complaint in each case was swelling in the upper abdomen with gradual enlargement. The duration of the swellings were six weeks, six months, and nine months respectively. Two of the cases gave a history of gall stone colics, the one with a history of five years standing and the other of ten years and at operation gall stones were found in both cases. The third case complained of uneasiness and fullness in epigastrium after meals which was in all probability the result of extra-gastric pressure. All complained of weakness, though weight loss was noted only in one.

Examination of the abdomen in each case revealed a tumor in the upper abdomen above the umbilicus and to the

left of the midline. The tumors were dull on percussion, smooth and tense to the palpating hand with a questionable fluctuation in one.

The blood Wassermann, blood urea, test meal, and X-ray examination were of negative value.

The urine examination of two of the cases was negative on several occasions while in the third case sugar was present in two examinations. The blood sugar in this case was 0.14 per cent on two separate occasions.

The stool examinations were negative in two of the cases while in the other case there was a small amount of neutral fat in two out of four different examinations. The patient with sugar in the urine was not the one with the fat in the stool.

In two cases, the cyst pointed between the stomach and the transverse colon and in the third case through the gastro-hepatic omentum.

In examining patients with tumors in the upper left abdomen, one should keep in mind the possibility of pancreatic cysts.

Discussion.

Dr. J. T. Burrus, High Point, N. C.

I would just like to report two cases of pancreatic cysts that have come under my observation in the last year and a half. One case was a child only about three years old, who had a large tumor in the left side of the upper abdomen. This child was very much emaciated when the abdomen was explored. The cyst was probably the size of an orange. The tail of the pancreas was exposed and the cyst was dissected down to the base. It seemed impossible to remove all of the cyst. The child died twelve hours following the operation, whether from shock or what I do not know.

The next case was a woman twenty-two years old, who had quite a large cyst in the tail of the pancreas. In this case we pursued the course suggested by Dr. Black in his paper, bringing the cyst up to the parietal peritoneum with interrupted sutures. There we used nonabsorbable sutures, linen in this particular case, and simply removed the top of the cyst and packed the cavity

with iodoform gauze. This drained for a long while and there was a great deal of irritating substance that poured out on the abdominal wall. At times, to make this patient at all comfortable, we had to keep her in a bathtub for hours at a time, but eventually the sinus closed and so far as I know she is well.

I believe we have more cases of pancreatic cyst than we recognize, and I don't know of any condition which I felt more helpless in handling than these two cases. I am very grateful for this opportunity of hearing this paper.

DIAGNOSIS, PROGNOSIS, AND TREATMENT IN EARLY PULMONARY TUBERCULOSIS.

By Roswell Elmore Flack, M.D.,
Asheville, N. C.

For a long time it has occurred to the writer that papers should be prepared, by those who devote their time to treating tuberculosis, dealing with diagnosis and treatment of early tuberculosis, so that the physician who devotes his time to general medicine may have a better working knowledge of this very common disease. The family physician sees the greater number of these patients before a specialist is consulted. In the large number of cases the family physician is the sole medical advisor over a period of years, consequently it is of the utmost importance that he should be able to recognize the disease early so that the unfortunate ones may have the best possible chance to make a good recovery.

The writer has nothing new to offer in the way of diagnosis, nor does he claim that he is making any contribution to the subject that is not already known, but he wishes to call attention again to the cardinal points in the diagnosis of early pulmonary tuberculosis and try to point out the significance of some of these points, and perhaps it may create a new interest in searching for evidence of this disease. Those of us who are working in this field are impressed with the fact that the pro-

fession as a whole is not alive to the great importance of early diagnosis. When tuberculosis is so prevalent, one would think that more interest would be shown in the technique of making an early diagnosis. The physician is not altogether to blame for this condition as our medical schools do not devote sufficient time to the study of tuberculosis. If tuberculosis were an acute disease like pneumonia or typhoid all of us would be able to diagnose it readily; but since it is chronic, and the individual lives for years after infection has taken place we lose sight of the importance of making an early diagnosis. In order to get an impressive view of this disease and the toll that it requires annually in the United States one has only to consider that one death out of every ten, or two hundred thousand, is caused by tuberculosis. A large number of these lives could have been saved if an early diagnosis had been made and treatment instituted.

There appears to be some confusion about early tuberculosis and early phthisis. Early tuberculosis means that the infection has not produced extensive structural changes, and the disease in all probability has not been active over a long period of time, but it does not mean that the infection is of recent origin, as it is generally known that tuberculosis infection occurs in early childhood. Early phthisis means that a destructive lesion has taken place, which is not extensive. In other words, the first time that the sputum contains tubercle bacilli is the inauguration of early phthisis.

In obtaining data upon which a diagnosis may be made it is well to follow an orderly system as is used in studying other diseases. First, is the history, inspection, palpation, percussion and auscultation.

History: One will encounter cases of tuberculosis that will prove difficult to arrive at a diagnosis. Many times a carefully taken history will give the key to the diagnosis. Oftentimes information may be obtained in the development of the history that cannot be obtained in any other way.

At some period in the patient's life he may have been exposed intimately to tuberculosis or a member of his family may have died of the disease. It is always well to have the patient state to you his complaint, as this may be suggestive. Also have him give a description of the onset of the disease and its duration. There may be only a little hacking cough, no sputum, some loss in weight; there may or may not be night sweats; there may be streaked sputum. The patient may complain of weakness, and tires easily. The pulse rate may be accelerated. A constant but slight rise in temperature, usually in the late afternoon or early evening is very suggestive unless it can be explained by some other cause. Repeated attacks of colds and coughs that did not clear up promptly; that left the patient under weight, or the patient may complain of a general "run down condition." Even after a most careful physical examination little or nothing of importance may be found. In such cases it is readily seen how important it is to take a good history, and in but few diseases does a carefully taken history count for more.

Inspection: Many valuable points are obtained on inspection. Note the general development; if a child whether it weighs enough for its age period. The skin is often an index to health or disease. Some tuberculosis patients are "skin sick," and the first sign of improvement is noted in the clearing up of the skin. Note if there is lagging on either side. If lagging is noted it is the result of pleurisy. Look for retractions, supra and infraclavicular and over the scapulars.

Palpation: Some diagnostic points that were obtained on inspection may be confirmed on palpation. If lagging of one side was noted on inspection it may be found that vocal fremitus is diminished or entirely absent. Over the retraced areas it may be increased and muscle spasm is often observed over retractions, and enlarged lymph glands of the neck and axillae may be noted.

Percussion: In early tuberculosis

one would not expect to find marked changes in the percussion note, as the structural changes are not so extensive. The note may be only slightly impaired, somewhat shorter than normal, or it may be hyperresonant, or it may be slightly dull, or there may be complete dullness or flatness, depending upon the density of the tissue.

Auscultation: Of all the means at our disposal more diagnostic data are obtained by auscultation than by any other method. In order that the examiner may appreciate the finer points to be elicited on auscultation he must have fully in mind what the normal breath sounds are. Vesicular breathing is not alike in everyone. In order to establish a normal for each patient one should find some area in which there is no evidence of disease—often-times over either one or both lower lobes normal vesicular breathing is found. With this standard of comparison one is able to discern any deviation from the normal. In auscultation just as on percussion, only slight variations may be detected, depending upon the nature of the lesion, its extent and the structural changes that have taken place. There may be only slight roughness on inspiration or there may be marked roughness, which denotes that there is a hyperaemia; there may be a harsh element or even bronchial breathing if the changes are gross enough. Only in a small percentage of early tuberculosis would one hear rales. One should train oneself to depend upon the variations from the normal vesicular breathing rather than upon waiting to hear adventitious sounds before making a tentative diagnosis of tuberculosis. Should we depend upon the appearance of rales to make a diagnosis, seldom would we make an early one as rales more often occur in rather advanced lesions. If we can determine the early signs of tuberculosis—even slight modification of the breath sounds from the normal to grosser differences—and know what we hear, and depend upon our findings, much earlier diagnoses would be made, and much valuable time be saved in getting the pa-

tient under treatment, thereby saving many lives; and those who did not succumb to the disease would be saved the long tedious fight that is required to recover from a more extensive tuberculous lesion.

There are cases that will prove very difficult of diagnosis after we have exhausted all our efforts in physical examination. In early disease the laboratory is not able to lend us much assistance as there is seldom sputum, and even where there is it is negative. However, we still have other aids that we may call upon in making a diagnosis—the tuberculin test, the X-ray, and complement fixation. Of these the tuberculin test is the most important.

Tuberculin Test: Before making a tuberculin test it is well to have a carefully kept temperature chart for two or more days, observations being made every two hours beginning at eight in the morning and closing at eight in the evening. The usual routine in giving tuberculin for diagnostic purposes is 1-3-5-10 milligrams. If tuberculosis is suspected after examination, the initial dose should be materially reduced to one-half milligram or even less. The time between doses should be at least three days in order to give time for the effect of the previous injection to disappear. When there is a positive response there will be a definite reaction with fever 100 F. or more, with more or less aching. There will also be a hyperaemia at the point of injection, which taken without fever is not diagnostic of active disease, but denotes that at some prior time the host was infected with tubercle bacillus. Should there be no febrile reaction with 10 milligrams it is safe to conclude that the tubercle has been healed out or encapsulated so that it is not accessible to the circulation. A reaction usually appears within eight to sixteen hours, and usually subsides within twenty-four to thirty-six hours.

X-Rays: Oftentimes the X-Ray will prove to be an invaluable aid in the hands of the expert. Even small cloudiness at either one or both apices and enlarged bronchial glands are very suggestive of tuberculosis infection.

Laboratory: When there is sputum and it is positive for tubercle bacilli the diagnosis is clinched. As has been suggested above, when the sputum is positive the case is not one of early tuberculosis, but may be early phthisis. We have still another laboratory test that may be of some aid. When the blood serum gives a definite binding with the tubercle bacillus antigen it is suggestive that there is an active focus of infection somewhere in the body.

Differential Diagnosis: It is not our purpose to discuss differential diagnosis of all the diseases that one may encounter and which must be considered before a diagnosis of tuberculosis is made. There are cases that will give but little difficulty, and there are others that will prove to be very puzzling. Only a few of the most common diseases will be mentioned, with the chief points that differentiate them from tuberculosis.

Bronchitis: Bronchitis is a very common affection and a great many people suffer from it. When one makes an examination of the chest and finds that there is bronchitis, its etiology must be determined. It is true that oftentimes bronchitis is a complication of tuberculosis. There is oftentimes fever with cough and expectoration in acute bronchitis. One usually finds that the patient has a cold. The etiology of such a condition is due to the micro-organisms which inhabit the upper respiratory tract. On examination, if the patient is suffering from bronchitis only, there will be no special findings from the normal on inspection and percussion. In a few days the adventitious sounds clear up promptly. As in all cases, a well taken history will be of great aid. If bronchitis does not clear up promptly and the patient has other symptoms, such as loss in weight, anorexia, cough, and a slight rise in temperature in the afternoon, one should examine carefully for tuberculosis. Chronic bronchitis is more prevalent in individuals past middle life. They are comparatively free from the trouble in summer, but as winter approaches there is more or less

trouble, which continues until spring. A careful examination usually settles the diagnosis.

Lung Abscess: At times lung abscess may resemble tuberculosis, but a carefully kept temperature chart, the quantity and character of the sputum, together with the laboratory report, the location of the abscess—which is usually in the lower lobe—and an X-ray make the diagnosis comparatively easy.

Bronchiectasis: Bronchiectasis usually follows pneumonia or pleurisy, and is frequently located posteriorly in the middle or lower lobes. It affects only one side, while tuberculosis is bilateral. The sputum is characteristic, the balls run together, and it has a fetid odor. The general condition of the patient is good.

Pulmonary Syphilis: Pulmonary Syphilis is more common than it was once thought to be, and it is not always easy to differentiate it from tuberculosis. A careful physical examination for evidence of old syphilitic scars, together with the history will oftentimes help in making a diagnosis. The location of the lesion in the middle or lower lobe, and the right side more frequently than the left is suggestive, and should put one on guard to search for evidence of a luetic infection. Also if the patient after being put on treatment for tuberculosis does not respond as he should one should think of a possible luetic infection. Complement fixation should be made for both tuberculosis and syphilis. There are times when we find the two diseases present in the same individual, and a lesion which was thought to be tuberculosis and proves to be indolent and does not show improvement clears up promptly under anti-syphilitic treatment. The X-ray will also give information as to the location and extent of the lesion.

Malaria: Malaria is often confusing, especially in districts where it is very prevalent. The disease may very closely resemble tuberculosis; the toxic symptoms of both being similar. One should never make a positive diagnosis of malaria without first making a blood smear. If the malarial parasite

is found, a diagnosis is made; however, it may happen that tuberculosis is present also. With careful chest examination and a well taken history the diagnosis will usually clear up if the lesion is pulmonary.

Intercostal Neuralgia: Intercostal neuralgia is often diagnosed as acute pleurisy. Intercostal neuralgia occurs infrequently when compared with the frequency of pleurisy. On breathing the pain is increased in pleurisy, while in intercostal neuralgia it is not influenced at all. In pleurisy on breathing the affected side is limited in motion. The motion is not impaired in intercostal neuralgia.

Influenza: The symptoms of influenza resemble those of tuberculosis. The disease is ushered in with fever, chill, cough, and free expectoration in a few days. The patient's health is usually below par, but the symptoms of disease were so slight that they were not recognized before the onset. On examination there may be found limited movement of the diaphragm and muscle spasm of the neck muscles and the muscles below the clavicle, indicating that the pulmonary tissue is involved beneath, suggesting the diagnosis. In some cases the sputum is positive for tubercle bacilli. One may also obtain history of repeated attacks of influenza, which is suggestive of exacerbations of tuberculous disease.

Prognosis: For a long time tuberculosis was thought to be an incurable disease, and by some it is still believed incurable. This attitude of hopelessness is due to a lack of knowledge of the disease. As our knowledge of tuberculosis has increased, and more refined methods of diagnosis have come into practice, early tuberculosis is being recognized and successfully treated, causing hopeless pessimism to give way to a rational supervision and treatment of these unfortunates. When properly treated the mortality in early tuberculosis should not be any greater than in any common infectious disease.

For convenience prognosis may be discussed under the following subdivisions:

Age; Constitution; Economic Condition; Environment; Character of Lesion; Mental Attitude.

Age: Prognosis depends upon the age of the patient. The first four or five years of life is the most serious age period for tuberculosis. During the early years the child is gradually developing, immunity against tuberculosis, and an adequate resistance has not been established at this time. For this reason an infection oftentimes proves fatal, because the organism is not able to resist it. In the early period it has been established that there is little tendency toward healing, and it is only after the fifth and sixth years that the child's resistance is sufficiently marked so that the disease shows a tendency to heal. From this period on the disease assumes a more or less chronic state up to the fifteenth year, when fully one-half the cases are chronic. After the fifteenth year chronicity is established in most cases.

Constitution: We now know that many children at birth have poor constitutions, and are consequently more susceptible to all infectious diseases, including tuberculosis. We know also that tuberculosis is not an inherited disease as it was for a long time thought to be. Individuals who are below par physically are more susceptible to tuberculosis, and when they come to us for treatment, having frank tuberculosis, we should not look upon all of them as hopeless even though they have a poor physique, as many of them respond favorably to treatment; yet it must be admitted that, all things being equal, the individual with a better physical development stands a better chance of recovery.

Economic Condition: Prognosis also depends upon the financial status. It is a well known fact that tuberculosis is more prevalent among poor people than any other class, but it is found in all walks of life. It is also a disease in which the infection takes place in early life, at an age when the resistance is not well developed; this taken together with the poor economic status favors development of clinical tubercu-

losis and makes the prognosis less favorable. Poverty and ignorance are twin sisters, and dwell together; yet there are many intelligent people who suffer on account of poverty, and being a member of the wealthy class does not always guarantee intelligence as some of the most ignorant people are found among this class. Pottinger very aptly sums up the situation in this language: "It has been my observation that the best patients to treat are those of the middle class. Here we have intelligence, combined with enough means to care for the patient, yet we do not always have to fight ignorance which is very common among the very poor, and the wilfulness which is so common among the very wealthy."

Character of the Lesion: Since we are dealing with early tuberculosis the character and nature of the lesion have not assumed the extensive structural changes of advanced tuberculosis, and the nutrition of the patient has not suffered so much as is often seen in more advanced active lesions. There are two types of lesion that mainly deserve our attention in this discussion, namely: Acute caseous tuberculosis and fibroid tuberculosis. Acute caseous tuberculosis is often found involving a large portion of the lobe, and the pathological process throughout has the same status, as the infection occurred at the same time from numerous virulent bacilli coming from a focus near by. The patient's resisting powers are overcome from being overwhelmed by so extensive implantation of virulent bacilli, consequently the disease usually develops rapidly and the prognosis is unfavorable. The disease may take a favorable course, and the patient recovers. In those who recover the lesion sloughs out before the patient's fighting powers have been exhausted by the toxemia. If, on the other hand, the disease progresses until the patient's nutrition has become seriously impaired, death ensues.

We know that tuberculous infection occurs in childhood, and that it extends to the surrounding tissue by secondary metastases. Since the infection de-

velops slowly the body has gradually developed an immunity which retards the progress of the disease, causing it to assume the fibroid type which may cause the patient little concern for years. If the lesion is diagnosed early and the proper treatment instituted a favorable outcome may be expected. Should the diagnosis be made late the outlook is not so favorable, as these lesions are prone to become ulcerative. If we wish to serve our patients to the best of our ability and give them a chance to get well when the prognosis is favorable we must not fail to make our diagnosis early before symptoms of active and advanced tuberculosis manifest themselves.

Environment: The environment in which a patient lives has much to do with retarding the disease and overcoming it, and for this reason prognosis depends a great deal upon one's living conditions. The home may be made bright and cheerful, and one's family and friends can aid much in keeping up the morale of the patient, or conditions may be such that the patient is depressed and loses hope, which influence the prognosis unfavorably.

Mental Attitude: Much depends upon the mental attitude. If the patient takes a cheerful view of his condition and co-operates to the best of his ability with his physician, a beneficial influence will be exerted upon the disease as the body functions are not embarrassed. However, should a pessimistic attitude be assumed the patient worries and oftentimes gets angry over trifles, all the body functions are inhibited, and improvement is retarded. Hopefulness, cheerfulness, contentment exert a beneficial influence, and the body functions are greatly augmented, thus influencing the disease beneficially.

Treatment: Much could be written regarding the treatment of tuberculosis as there are so many things entering into it. The more important methods used follow:

Relationship of physician and patient, rest, proper food, fresh air and exercise, specific remedies, climate,

sanatoria. Only briefly will be discussed the common remedies in the possession of every physician.

One of the most important points to be considered in treating a chronic disease like tuberculosis is the relationship between physician and patient. If the patient does not have complete confidence in the ability and integrity of his physician much is lost, because there is not the whole-hearted co-operation which is so essential for encouragement and moral uplift; while on the other hand if there is complete confidence and the fullest co-operation a mere word of encouragement often makes the patient happy for the entire day. Psychotherapy is a powerful remedy if properly used.

Rest, proper food and exercise form the keystone of the arch in therapeutics in treating tuberculosis. Of all the remedies at our disposal rest is the most essential. To tell your patients to rest, eat, stay in the open air, and take exercise is not sufficient advice. Just here it may be added that many patients try to direct their own cases by taking the so-called "cure" independent of medical advice, and many lose their lives by this course, or allow a simple form of the disease to develop into a more serious one before they realize that they cannot direct their case. If we would prevent this course we must be able to advise our patients more intelligently, thereby gaining their confidence, and point out to them how essential it is for someone who is fully acquainted with the pathology of the disease and is able to guide them in every step of the way to effect an arrestment to have charge of their case. In order for a patient to rest he must be instructed how to rest; whether he should take absolute rest; whether he should sit up for a short time each day; whether he should be placed on the porch; whether he should take exercise; all depend upon the nature and extent of the disease and the condition of the patient. The nature and kind of food and the quantity of food to be taken must also be explained. There are three general classes of foods; fats, proteins and car-

bohydrates. For practical purposes a daily ration of five ounces protein, five ounces of fat, and ten ounces carbohydrates is sufficient. The amount of food depends upon whether the patient is at rest or on exercise. For bed patients 1,800 to 2,000 calories. For those sitting up or on light exercise, 2,400 calories.

Drug Therapy is limited to the tonics, sedatives, expectorants and laxatives. There are no drugs that exert any specific action upon tuberculosis, but, when indicated, there is an indirect action which may build up the general body resistance, thereby influencing the disease beneficially. All the remedies that have been mentioned so far are in the possession of every physician, and it behooves each one of us to acquaint himself sufficiently with them so that our patients may be advised intelligently. We cannot shift all our responsibilities to the shoulders of the specialist, as many patients are too poor to be sent away and must necessarily be treated at home. In order to get the desired results it is not necessary in every case to send the patient away to some resort where the climatic condition is more favorable. By using in an intelligent way, the remedies which are at the disposal of every physician, and by directing the treatment of every patient many lives could be saved.

Specific Remedies: In treating tuberculosis there are many patients for whom specific remedies will prove very beneficial. It is very important to select cases that are favorable for such treatment, and it is also important that the one who administers such remedies have experience. We all know that there is no specific for tuberculosis, but we know as well that we have antigens at our disposal that react specifically. Through these specific reactions the general immunity of the patient is increased and the tuberculous lesions heal more promptly. A specific reaction in a tuberculous focus increases hyperaemia, and the increased hyperaemia favors fibrosis. It has also been our observation that by the

addition of specific remedies to all the remedies that have been suggested above the arrestment appears to assume a more permanent nature and relapses occur less frequently than in those who have been treated by the "rest cure" alone.

Discussion.

Dr. B. O. Edwards, Asheville, N. C.

I wish to express my appreciation of the thoroughness with which Dr. Flack has discussed this subject in the short time allowed, and I also want to emphasize a few of the things he has mentioned.

I am very glad Dr. Flack emphasized the importance of early diagnosis, for that is the keynote in the treatment of tuberculosis. That we have reduced the death rate from tuberculosis from — to 92 per 100,000 I think is due to the public health workers, who have spread propaganda urging people who have symptoms indicative of tuberculosis to the family physician or the chest man and have a thorough examination.

Dr. Flack said that patients have a tendency to chronicity about the age of fifteen. I think that is true. It is also said by some of the authorities that seventy-five per cent of the children are infected with tuberculosis by the age of fifteen. This tendency to chronicity has a great bearing on the treatment of these cases. It is also, I believe, generally conceded that most of us (I believe it is estimated that ninety per cent of us are infected or have tuberculosis some time in our lives, though some say eighty per cent) get it in childhood and it lies dormant until some great strain comes, some strain on the system, and then it flares up. Others say we do not all get infected in childhood but are infected after we reach maturity from massive infection, that we get such an amount of infection that the body is not able to take care of it and consequently we have active tuberculosis. We have immunity in the system—that is, the tendency to chronicity before the disease is so advanced is one of the things that has helped to get the good results when started early.

Often we have cases of tuberculosis that are very acute and continue in the acute stage, and we do not have time to build up an immunity. The object of our treatment of tuberculosis cases is to create and build up in the body an immunity to tuberculosis. That is the one important thing. We use many remedies, as Dr. Flack mentioned, rest, fresh air, and medicinal remedies such as tonics, etc. In advanced cases of tuberculosis, where there is a great amount of involvement, there is a great amount of immunity in these cases. Were this immunity established at the beginning of the cases, as in the advanced cases, many of those cases would be arrested and the lesion healed.

CASES ILLUSTRATING THE SURGICAL TREATMENT OF INTESTINAL TUBERCULOSIS.

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Rocky Mount, N. C.

Surgery as the treatment of choice in intestinal tuberculosis was first urged by Hartmann as far back as 1891. Since then its value has been recognized by a steadily increasing number of surgeons, until today it has become a standard procedure. That this opinion is also shared by close students of tuberculosis among medical men is shown by the statement of Paterson of Saranac who declares that medical treatment has been tried faithfully without satisfactory results, and that "surgery offers the greatest hope in the treatment," provided the cases are carefully selected. Of course there is no implication that the recognized principles of diet and hygiene should be neglected, while the various forms of light therapy, particularly the exposure of the abdomen to the direct rays of the sun, are of the greatest value and importance after operation.

Among the operative procedures complete excision is of course the ideal thing, but it must of necessity be con-

fined to those cases where the area of involvement is limited to a relatively small portion of the gut. Cases not suitable for complete extirpation have been helped materially by a palliative exclusion of the diseased area, by a simple appendectomy or by exploration alone. In a few extreme cases enterostomy has been done but the results obtained seem questionable, and according to Keene it should never be used. As might be expected there are a number of cases which have not been benefited by any type of operation, and some which have been made worse. With the means of diagnosis now available the actual extent of the intestinal involvement cannot be foretold with any accuracy, and the operation must be considered, for the present at least, as more or less an exploration.

The procedure employed will depend largely on the extent of involvement and the type of lesion found. These types are classified by Erdman as follows:

First, the ulcerative type, or tuberculous enteritis, which he says is not ordinarily regarded as surgical. However Archibald of Montreal, who reported twenty-seven operated cases in 1917, does advocate operation in many of these cases. Indeed it may become a necessity through the supervention of obstruction or possibly a perforation, though this latter occurrence is rare.

Second, the cicatricial or stenosing type resulting from the contraction of a completely healed ulcer and occurring most frequently in the small intestine, either singly or multiple.

Third, the entero-peritoneal type, most frequently found in the ileo-cecal region and combining ulceration with hyperplasia of the intestinal wall as well as some involvement of the adjacent peritoneum, mesentery and lymph nodes.

Fourth, chronic hyperplastic tuberculosis, considered to be the most important from the surgical standpoint and the most favorable for excision. This interesting type "is essentially a disease of the cecum but is also found in the terminal ileum, the flexures of the colon and in the rectum." Accord-

*Read at the Greenville meeting of the Tri-State Medical Association, Feb. 20-21, 1924.

ing to Adami the main feature of the pathology is extensive hyperplasia of the connective tissue in which typical tubercles are scanty or even absent. Caseation is rarely extensive and there is rarely ulceration of the mucosa which is often thick, uneven and covered with polypoid growths. A slow growing nodular tumor is formed, the density and bossed surface of which closely simulates carcinoma. Eventually symptoms of chronic obstruction develop.

The types above outlined are fairly well illustrated by nine cases treated at the Park View Hospital during the past nine and a half years, during which period 8,889 patients were admitted. Two of the nine were hopelessly advanced cases of enteritis, both of whom were treated medically. Both died and one came to autopsy where the diagnosis was confirmed. The remaining seven were referred for surgical treatment to my associate, Dr. B. C. Willis and myself, and were operated by one or the other of us. It is significant that the correct preoperative diagnosis was not made in a single instance, and it is doubtful if we would do much better in a similar series. However, if the possible presence of tuberculosis were kept in mind, and the cases more carefully studied, especially with the aid of the fluoroscopic technic perfected by Brown, Sampson and Heise, at least two of the cases ought to be diagnosed with fair accuracy. Because of the difficulty in recognizing any but advanced cases, it is probable that other patients with the disease have passed through the hospital incompletely or incorrectly diagnosed.

Our first operation case was a colored female, age 48, referred by Dr. J. P. Speight, April 21, 1918, for cramp-like pain in the abdomen with associated nausea and vomiting, and tenderness and soreness over the appendix region. General examination showed nothing remarkable except a smooth, slightly tender mass at McBurney's point, which was thought to be an appendix abscess. Operation showed the head of the cecum to be involved by a hard fairly smooth mass adherent to the lateral wall but

not to the omentum or small gut. The appendix could not be identified in the mass. There was very little glandular involvement. Under the impression that we were dealing with a malignant growth, the lower end of the ileum, the cecum and the lower half of the ascending colon were excised, and an end to side anastomosis made with Murphy button. Two small cigarette drains were put in. There was evidently some slough at the anastomosis as there was prolonged drainage with occasionally a small amount of feces. Eventually the wound healed completely and the patient continued in fair health for eighteen months when she died suddenly, supposedly of heart disease.

When the growth was examined no signs of cancer were found. The peritoneum and mucosa were both intact, though both were thickened and showed an extensive low grade inflammation. The mass consisted entirely of the thickened tissues of the bowel wall, chiefly the submucous and subserous coats. Macroscopically no tubercles were seen, and the specimen was unfortunately lost before a microscopical examination could be secured. Grossly the appearance of this mass was typical of the recorded descriptions of hyperplastic tuberculosis, but as the confirmatory evidence of the microscope is lacking a positive diagnosis cannot be made.

The second case was a white male, age 28, referred by Dr. Virgil Legget of Hobgood, N. C., March 21, 1921, because of pain in lower abdomen of four days duration. This pain began beneath the naval, was at first rather mild but later became worse, and localized in the lower right quadrant. There was no vomiting or nausea. Several doses of purgative had acted well with no noticeable increase of pain. There had been no chest symptoms and nothing to indicate trouble with the urinary tract. Previous history was unimportant except for the occurrence of a similar attack in childhood. Physical examination showed an undernourished young man with normal heart and lungs. There was moderate tympany but no muscle spasm. No mass was felt but there was definitely local-

ized, rather marked tenderness at McBurney's point. None elsewhere. Slightly enlarged lymph nodes in both groins. Temperature, pulse and respiration normal. Leucocytes 9,000. Urine negative on two examinations except for a trace of albumen. The preoperative diagnosis was subacute appendicitis. Operation showed the appendix to be thickened and rigid, with no sign of recent inflammation. The last four inches of the ileum were greatly thickened, red, swollen and acutely inflamed by some process involving the whole bowel wall, and thought to be tuberculous. The adjacent cecum was slightly involved. The neighboring mesenteric nodes were markedly enlarged. No tubercles were seen. As far as it was examined the remainder of the intestine was normal. The lower six inches of the ileum, the cecum and the appendix were excised and an end to side anastomosis made with Murphy button. One cigarette drain was used. At first there was no drainage but on the fifth day a colon discharge developed which later became profuse, and a definite fecal fistula developed. This fistula healed completely in about two months and has not since reopened. The pathological report was tuberculosis of the lower ileum with extension to the cecum. In this case there was distinct, rather marked, ulceration of the mucosa. The patient improved rapidly, gained twenty-five pounds in weight, and has been farming regularly, enjoying better health than ever before in his life. When seen a month ago he was apparently perfectly well.

The third case, J. L. S., white male, age 33, Dr. Laughinghouse, Greenville, N. C., was admitted Jan. 23, 1922, complaining of repeated mild attacks of constipation and generalized abdominal pain for the past year. With the pain there was nausea and occasionally vomiting. Between attacks his digestion was good. There had been no difficulty in getting the bowels open with a purge. No blood in the stools but some mucus. During the previous six months he had noticed a "lump" in the lower right abdomen, which, so far as he could see,

caused no trouble and had not increased in size and for which he had declined active treatment. There was nothing in the previous or family histories which seemed to have any bearing on the case, specifically no cancer or tuberculosis. There had never been any symptoms referable to the chest. He was decidedly undernourished, and one arm had been torn off in a cotton gin. Routine examination of the chest showed apparently normal heart and lungs. The abdominal wall was firm with no rigidity. There was moderate distention. A mass was felt in the cecal region about three fingers in breadth, irregular in outline, slightly tender, and apparently pretty well fixed. A barium enema with X-ray gave inconclusive results, carcinoma being suspected though the picture was not typical. Urinalysis and blood examinations were negative. The abdomen was explored through a right rectus incision and the lower end of the ileum, the cecum and the first portion of the ascending colon were found to be extensively involved by an inflammatory process, most likely tuberculous. The whole mass was rather firmly fixed to the posterior abdominal wall, but there were no adhesions to the rest of the gut. No tubercles seen on the peritoneal coat. The mesenteric lymph nodes were greatly enlarged. The lower six inches of the ileum, the cecum, the ascending colon and the hepatic flexure were excised and a lateral anastomosis made between the ileum and beginning of the transverse colon. No drainage was used. Just before closure of the abdomen several small ulcers were seen higher on the ileum. These had not been noticed in the first exploration but had been brought out by the congestion incident to the handling during the operation exactly as the typical "stippling" of a gastric or duodenal ulcer is brought out by slight trauma. These ulcers were left untouched. A not unexpected wound infection developed in the superficial tissues but healed promptly without weakening the wound. The pathological examination, gross and microscopic, showed a definite tuberculosis with advanced ulceration of the mucosa. At

one point there was almost complete obstruction. After operation X-ray examination of the chest showed considerable evidence of old tuberculosis, and the patient was referred to Dr. P. P. McCain of the State Tuberculosis Sanatorium. Under his treatment, which included daily sun bathes, improvement was immediate and rapid. Despite the ulcers which were left in the ileum the patient remained free from bowel symptoms, and in less than one year had almost doubled his weight. When last heard from directly a short time ago he was holding his weight and appeared to be entirely well.

This case and the one just preceding it are probably best classed as examples of the entero-peritoneal type, showing as they did well marked ulceration combined with hyperplasia of the wall of the gut and involvement of the overlying peritoneum. While end to side anastomosis with a button or lateral union with sutures is advised in Keene, it is probably better to do an end-to-end as does Mayo who points out the danger of subsequent ulcer development in the pockets formed when the bowel end is closed. Keene warns against the poor healing power of these tissues and urges unusual care in suturing. We believe we would have gotten better immediate results in our first two cases if we had used sutures instead of the Murphy button.

The fourth case, a colored female, age 23, Dr. Edgar Long of Hamilton, N. C., was admitted Oct. 11, 1923, complaining of a "misery" in her right side of some three months duration. The pain was referred to the epigastrium and was most noticeable after eating, especially when she was constipated. There was no nausea, and as a rule she could eat any ordinary food with no discomfort except this pain. Bowels required purgative as a rule. There were no chest urinary symptoms and menstrual and past histories were negative. General physical examination was entirely negative except for slight tenderness in the lower right abdomen. The patient was explored largely because of the history of pain and the fact that Dr. Long had

seen her several times with definite attacks of what appeared to be appendicitis. A thickened adherent appendix was found and removed. The pelvic organs were negative, also the gall-bladder. Two definite ulcers were found in the small bowel, one in the ileum the other in the jejunum. The upper one was producing definite obstruction and was resected with end to end union of the gut. Following the handling of the bowel incident to exploration and anastomosis numerous stippled areas indicating widespread ulceration were found. Obviously no further operative work was indicated and the abdomen was closed. Microscopical examination showed definite tuberculosis in the resected portion of jejunum. This patient made a normal convalescence and Dr. Long reports her as doing well with some improvement and no further attacks of pain.

The next case, white female age 28, was referred by Dr. J. C. Brantley of Spring Hope, N. C., Oct. 29, 1923, for pain in the lower abdomen and the flanks. Her symptoms dated back three years, and on several occasions had simulated kidney colic, morphine being required for relief. No stone or blood had been passed. Menses were regular but flow was excessive and associated with some pain. Stools had been normal in number and amount with no blood or mucus. Appetite good with no "indigestion." No chest symptoms. Past history was unimportant except for typhoid and influenza in 1918.

Examination showed her to be sallow and decidedly undernourished in appearance. Heart and lungs normal. Abdomen soft with no tenderness or mass. Both kidney regions tender. Uterus adherent in retro-position and tender, with irregular masses either side, supposedly tubes. The kidneys were ruled out by urinalysis, cystoscope and pyelogram. Operation showed a general ptosis. There were light adhesions along under surface of liver, and the gall-bladder was thickened and distended, no stone. The kidneys were negative. The appendix was extensively adherent. The mesenteric lymph

nodes were enlarged throughout, some soft and caseous, others calcified. Numerous ulcers, some with tubercles in the overlying peritoneum, were seen throughout the lower ileum, the length of bowel being entirely too great for excision. A large hard uterus was bound in retroposition. Both tubes were size of a thumb, nodular and apparently tuberculous. The appendix and tubes were removed and the uterus suspended. The microscope showed definite tuberculosis of both tubes. The patient was discharged nineteen days after operation and continued to improve steadily with some gain in weight until Dec. 7, 1923, five weeks after operation, when she was readmitted with symptoms of acute obstruction of twelve hours duration. Enemas gave no relief, nausea and vomiting set in and leucocytes were 17,000. On opening the old incision under novocaine a knuckle of gut was found caught under a band extending from the mesentery to an inflammatory area overlying a large ulcer. Apparently there had been no extension of the tuberculous condition since the first operation. The obstructed bowell was freed and the abdomen closed. Recovery was prompt and as soon as possible the patient was sent to the State Tuberculosis Sanatorium where she is at present.

This case and the one preceding are examples of the "ulcerative type, or tuberculous enteritis which is not ordinarily regarded as surgical." While both patients received considerable temporary benefit from relief of obstruction, if nothing more, we feel that the chances for permanent improvement are slight.

In addition to the above cases we have operated on two children, two and four years ago, respectively, for obstruction due to tight annular constriction of the small bowel caused by the contraction of an old healed ulcer of unknown etiology. While both were typical of the cicatricial stenosing type mentioned by Erdman, and while the annular ulcer is characteristic of tuberculosis, we cannot make a positive diagnosis in these cases as nothing was left for microscopic examination except scar tissue. Indeed,

it would seem to be difficult in almost any given case of completely healed ulcer with scar tissue contraction such as is supposed to make up the cicatricial or stenosing type, to prove beyond question that tuberculosis was the original cause. There was nothing in the previous history of either of these children to aid in making a diagnosis of the disease causing the primary ulcer, and both have enjoyed perfect health since operation.

PREPARATION OF HYPERTHYROID CASES FOR OPERATION BY RADIUM.

By Robert Lee Payne, M.D., F.A.C.S.,
Surgeon St. Vincent's Hospital,
Norfolk, Virginia.

In Tidewater Virginia and North Carolina the incidence of simple goitre is small compared with the frequency of the toxic or hyperthyroid type. In an analysis of the last fifty thyroidectomys done by me in St. Vincent's Hospital I find that seven fell under the group of cystic adenoma, fourteen were classified as toxic adenoma and the remaining twenty nine cases were of the exophthalmic type. The question of operability and the determination of the time for operative interference is therefore our most serious problem.

When I first began to employ radium six years ago the literature was flooded with favorable case reports of Grave's disease treated by radium applications and over a period of three years we gave radium a thorough trial in the treatment of hyperthyroidism with the result that we considered this method of treatment as a curative measure entirely a failure. It is true that many cases were materially benefited and some remained symptoms free for long or short periods of time, but in all the cases treated exclusively by radium I have yet to see a case which did not at a later date have a recurrence of her symptoms which demanded surgical interference. Three

years ago we began to employ the metabolism estimation of the basal rate in thyroid cases with the view of applying it to the time of selection for operation and merely by coincidence we discovered that this rate was materially and rapidly reduced in those cases who had had radium given over the thyroid gland. Following this observation we began the practical application of the principle of radium to each lobe of the thyroid as a means of reducing the toxicity of the gland and in turn the basal metabolism rate of the patient, thereby preparing them more readily for the major surgical procedure of the thyroidectomy.

In all of our toxic cases we have applied radium and taken frequent metabolism estimates with the results that frequent observations have led us to place a good bit of confidence in the ability of radium in proper dosage to reduce the metabolism rate in hyperthyroidism more quickly than any other method that we have been able to employ. The results have not been uniform, but the general improvement of the patient's symptoms together with a fair reduction in the metabolic rate has taken place in all but two of these cases. In some patients the reduction in rate was as much as fifty points within the first ten days, but the general average of all the cases shows a mean reduction of between fifteen and twenty points within ten days. The greatest stride for betterment of the patient usually occurs within ten days and this is particularly true of the metabolic basal rate. In studying our cases we find that the greatest reduction in the metabolic rate has occurred usually within the first week after radium and that the subsequent reduction in metabolic rate is gradual, less rapid and extends over a period of from four to six weeks.

The exophthalmic cases do not show so rapid and remarkable improvement as do the toxic adenomata which characteristically respond rapidly after the use of radium. The essential features of hyperthyroidism are the symptoms of the cardiovascular and nervous system and these disturbances have consistently shown an improvement in direct ratio

to the reduction in the metabolism as observed by frequent readings following the application of radium. It must be understood, of course, that in all of our cases we have employed the usual rest in bed and the diatetic measures such as have always been employed in the toxic cases and it is of course difficult to evaluate all of the influences that radium may have in the improvement of the case. We would therefore not make the claim that radium is responsible entirely for the betterment of these patients. At the same time the improvement we have been able to secure through radium, rest and dietary measures has far exceeded the improvement in a similar series of cases treated by other methods such as were employed before the advent of radium.

Along with this frank expression of doubt as to the full value of radium in these cases, I would like to remark upon another observation of doubtful nature which we have made while using radium in hyperthyroidism. Frequently cases are seen presenting many symptoms of hyperthyroidism in which the diagnosis cannot be made and further there is no perceptible or notable enlargement of the thyroid gland but the basal metabolic estimates show a mild increase above the normal metabolic rate. The question of course arises as to whether the thyroid or something else is responsible for the increase in the metabolic rate. In a few cases of this type we have given a moderate dose of radium over the location of the thyroid gland and subsequently had a reduction of the metabolic rate to normal within a period of a week or ten days. In two such cases we used this guide to help us in the diagnosis of hyperthyroidism and the patients were subsequently relieved of all their symptoms by a timely thyroidectomy.

I have no way to explain how radium over the thyroid gland would reduce a metabolic rate to normal other than through the effects on the circulation of the thyroid, at the same time I would not want to make any radical claim for this measure in the adaptation of radium treatment to the thyroid, but make

the observation in this paper with the hope that other men may possibly make similar observations in the future.

With regards to dosage, we have finally settled uniformly in all cases where there is a marked rise in the metabolic rate and a definite trend of symptoms, cardiovascular nervous in origin such as accompanies a typical case of hyperthyroidism, upon a dosage which is generally expressed as an erythema dose consisting of 600 milligram hours over each lobe of the thyroid. The hard Beta Rays must be excluded and for this purpose we utilize a one-half inch block of wood. In our first cases we employed smaller doses, ranging from 150 milligram hours to 300 milligram hours, but I feel confident now that the erythema dose of 600 milligram hours is about right and in keeping with the fairly good results we have been able to obtain during the last three years. In a majority of cases showing a fair degree of hyperthyroidism and a metabolic rate of plus 50 or 60, it has usually been our good fortune to get their general symptoms so improved and their metabolic rate reduced to plus 25 or 30 within ten days or two weeks, at which time operation has been safely carried out. Some of our cases, however, have necessitated a second treatment with radium which we usually carry out at the expiration of two weeks from the first treatment if the metabolic rate is not showing a definite and rapid drop. In one case the preparatory treatment together with the three exposures of radium extended over a period of nine months, but I feel reasonably sure that without a reduction in the gland through the use of radium we would never be able to prepare this patient for a safe operation.

It is claimed by many surgeons that radium and X-ray materially complicate the operative procedure afterwards, and this is to a large extent entirely true. In all of our cases who have had two or more exposures of radium we found a very extensive perithyroiditis which has made the enucleation of the gland very difficult. In those cases who have received one treatment of 600 milligram

hours over each lobe we have only found the presence of a perithyroiditis immediately along the front of the gland making the ribbon muscles adhere to the capsule, whereas the posterior and lateral aspects of the gland have been free of adhesions and enucleated without any unusual difficulty.

My experience with radium in the preparation of hyperthyroidism for operation has been entirely too limited and my series of cases entirely too small in number to warrant any definite conclusions. The result of the work, however, I offer to you in the nature of an observation with the hope that something better may come from a more extensive experience along these lines. Suffice it to say that for the past three years I have entirely abandoned the procedure of ligation in hyperthyroidism and unless results over a larger series of cases make me change my opinion, I believe that radium in proper doses will take the place of ligation. Let it be borne in mind always that the effect of radium on the hyperthyroid gland is always transient and that operative removal must follow to make a permanent cure.

THE DIAGNOSIS OF DISSEMINATED SCLEROSIS.

By R. Finley Gayle, Jr., M.D.,
Richmond, Virginia.

Possibly the first case of disseminated sclerosis in the literature was described by Gruveilhier in 1835. He spoke of the condition as "induration of the cord with paraplegia." The case described by him was evidently a classical picture of what we now know as disseminated sclerosis. Frerichs in 1849 diagnosed clinically many cases as spinal sclerosis and differentiated them from syringomyelia and tabes. One of his pupils, Valentiner, in 1856 published the subsequent history of these patients with autopsy reports and pathological findings which confirmed the correctness of the diagnosis. Charcot published the

symptomatology and pathology of the disease, as we know it today, about the middle of the last century. His classical signs were nystagmus, scanning speech and intention tremor. Later Oppenheim brought out the sensory changes. It was not until 1899 that Jthoff described optic nerve changes, especially retrobulbar neuritis, types of scotoma and contractions of the visual fields. Since then progress has been made largely along the clinical side in the finer points of diagnosis.

The question of the etiology of the disease hinged for many years upon whether the disease was a primary or secondary sclerosis. Marie believed it to be dependent upon a previous infectious disease, while others thought of trauma as a causative factor. Recently the belief that disseminated sclerosis is a disease per se has attracted more and more supporters. In 1917 Kuhn and Steiner produced the disease in guinea pigs and rabbits following the injection of spinal fluid from cases of disseminated sclerosis. They, together with Siemerling, found a spirochete after death in cases they considered disseminated sclerosis.

It is believed by some neurologists that disseminated sclerosis is the most common of all organic nervous diseases. This is not borne out by our experience as our cases of syphilis of the central nervous system far out-number this disease. There are no doubt many individuals afflicted with this malady whose true disease is unrecognized and then too the onset is so insidious that unless very careful neurological examinations are made it is very easy to attribute the earliest signs of this disease to other conditions. The diagnosis is not so easy as one may be led to believe. It often requires weeks of observation before one may be certain of the diagnosis.

Multiple sclerosis may occur at all ages, it has been reported in about one hundred cases in children. The disease is most common between the ages of twenty and forty. Males are more often affected than females, the ratio being about three to two. Statistics show that multiple sclerosis is more common in

the rural population and affects mainly those who do skilled manual work. The duration of the disease averages about eight years but may run less than a year or more than thirty years.

We do not believe that trauma to the spinal cord has any direct bearing on the disease. It may awaken a dormant disease process within the cord and stimulate it to activity. Multiply sclerosis has been said to immediately follow an infectious disease and it is our belief that it will some day be proven that this disease is the result of a selective action of the toxins of certain infectious fevers on the central nervous system.

It is not our belief that it is essential to have any one particular group of symptoms to make the diagnosis of multiple sclerosis. We feel that any chain of symptoms which is dependent on a multiplicity of central nervous lesions, not attributable to some other disease, warrants this diagnosis. In the early stages of disseminated sclerosis there are many symptoms which are so transitory as to escape detection and so slight that they do not make an impression on the patient. These symptoms may, and usually do, recur later and progress into a fully developed case of the disease. Early remissions are common and no doubt occur in the majority of cases. Transient symptoms which usually usher in the disease are impairment of vision, paresthesias, fatigue, weakness of an extremity and ocular palsies. An apoplectiform seizure with partial hemiplegia may be the first symptom to attract attention.

As the disease progresses motor symptoms are prominent, there develops a stiffness or weakness of one or both legs, which finally develops into a spastic paralysis. Upper motor neurone involvement is most often the case although there have been cases reported in which the lower motor neurone was said to be attacked. Paralysis may involve one, two, three or all extremities. Rarely, the pathology may be limited to the spinal cord.

Reflex changes are almost without exception present. The most characteris-

tic alteration is the exaggeration of the knee and ankle jerk with angle clonus, positive Babinski and other pyramidal tract signs. The positive Romberg sign is a most constant finding and the disturbance of gait is of the spastic ataxic type. The abdominal skin reflex is absent in a great majority of cases and many attach more importance to this reflex change and to nystagmus—which is usually lateral—than to any and all other symptoms or signs of multiple sclerosis. Ocular palsies, diplopia, transient amblyopia, scotoma, temporal pallor of the optic disc, facial weakness, deviation of the tongue, difficulty in swallowing and deafness are other signs of cranial nerve involvement which may appear singly or in combination.

It is a striking fact that there is seldom any marked limitation of the visual fields in spite of well advanced pallor of the temporal quadrant of the optic nerve. Temporal pallor is one of the most important findings because it is found in practically no other nervous diseases. A valuable differential diagnostic point in the absence of swelling of the nerve head.

Subjective sensory disturbances are most always complained of. They are manifested by numbness, tingling, vague pains and are sometimes spoken of as a "queer" feeling in the extremities. Objective sensory changes are indefinite and scattered over the trunk, arms and legs.

Scanning speech or some form of dysarthria is present in about half of the cases. It was in the "triad of Charcot" as an essential diagnostic point but present day observers do not require this symptom for a diagnosis of multiple sclerosis. In our own cases we have found it in probably less than half of them.

Intention tremor is a frequent finding and was one of Charcot's original triad. It is much more common than the dysarthria and is often the most outstanding symptom of late cases. Next to disturbed locomotion it is probably the most annoying.

Dizziness—vestibular vertigo—may be found in a small number of cases.

A symptom seldom considered as a part of disseminated sclerosis but which statistics claim occurs in forty per cent of the cases is the disturbance of the vesical reflex. The alteration of function may be a hasty or delayed micturition but in some cases it amounts to complete incontinence.

Tenderness of the dorsal spine is found infrequently but is thought by some to be an important observation. We do not recall ever having noticed this symptom in any of our cases.

In well defined cases of disseminated sclerosis we most often note marked changes in personality. These individuals are unstable emotionally, as shown by euphoria, irritability, at times violent outbursts of temper, tearfulness, or explosive laughter for which there is no demonstrable reason. These may be single or in any combination.

It is the consensus of opinion that there is no characteristic disorder of the mind associated with this malady although a large number of cases have psychic symptoms. Some writers (Sanger Brown and T. K. Davis) have stated that the mental symptoms accompanying multiple sclerosis are dependent upon organic brain disease. This contention is not corroborated by the conclusions of the Commission of Association for Research in Nervous and Mental Diseases at its meeting in 1921. Some mental changes found in the disease being discussed are elevation of mood, depression, mental deterioration, hallucinations, paranoid and praecoid trends. Although suffering with very serious disease these patients do not seem deeply concerned about themselves nor do they always take their condition seriously. The depressed states are fewer in number but there are reports in the literature of suicide during the mental depression of disseminated sclerosis. Mental deterioration may or may not occur although it is probably present in the majority of cases with mental symptoms of long standing. Mental disturbances are quite variable and may entirely disappear, but usually recur.

In this disease we are sometimes con-

fused in the diagnosis by the complete disappearance of symptoms even in pronounced cases. These remissions are at times so misleading as to make us think we have been dealing with a case of hysteria or some other functional nervous disease. We have in mind a classical case of well defined multiple sclerosis whose family was given a grave prognosis as to the final outcome and were told of the possibility of a remission. The family would not accept the prognosis and took the patient to an osteopath who, fortunately for himself, caught the patient at the beginning of a remission. Naturally his "cure" was nothing less than miraculous. The family conveniently forgot the prognosis of a remission by the physician.

The blood and cerebrospinal fluid are essentially negative in this disease. One will occasionally find a slightly increased globulin and cell count in the spinal fluid. Colloidal gold tests have been reported, conforming to the paretic as well as to the luetic curve, but we do not feel that there is sufficient evidence to justify the acceptance of either of these. Spinal fluid pressure is generally within normal limits. The Wassermann is uniformly negative and syphilis has never been considered as a causative factor. A negative finding, especially helpful in the diagnosis of this disease, is the active pupillary reflex to light. Irregular, stiff or immobile pupils is not a finding of disseminated sclerosis.

When the medulla becomes involved death may be expected early.

On account of the lesions of multiple sclerosis being scattered throughout the brain and cord the symptoms of this disease may simulate most of the organic and functional diseases of the nervous system. It probably has to be differentiated from cerebrospinal syphilis more often than any other disease. The pupillary changes, blood and spinal fluid Wassermann tests and history of initial lesion and secondaries are helpful differentiating points. Acute inflammatory disease of the brain and cord, encephalitis or myeloencephalitis, is sometimes confusing. Disseminated sclerosis may

be acute in its onset but this is almost as rare as it is common in the inflammatory diseases. The presence of fever, more rapid course, sequelae of infectious disease and other inflammatory symptoms help in differentiation. Syringomyelia is differentiated by the dissociated sensory disturbances, although this has also been found in multiple sclerosis. Brain tumor may resemble disseminated sclerosis but usually the presence of headache, vomiting and choked disc with a progression of these symptoms will clarify the diagnosis. Spinal cord tumor may resemble this disease but there is the absence of remissions and the presence of progression of symptoms in cord neoplasm. Paralysis agitans may have a tremor somewhat resembling multiple sclerosis and the gait of the two diseases is at times similar. There is in the former, however, the presence of masked expression and absence of eye signs common to the latter. Subacute combined sclerosis may at times be confused with multiple sclerosis. The sensory changes are the most marked in combined sclerosis, there is the absence of eye ground changes and a cause, as pernicious anemia, may usually be found. There are, of course, other nervous disorders such as hysteria which must be differentiated. These two conditions are most confusing early in the disease, particularly on account of the transient symptoms of multiple sclerosis. Careful repeated neurological examinations will elicit the eye findings of the organic disease, reflex changes—especially absent abdominals and slight sensory changes. We are all too prone to satisfy ourselves with a diagnosis of a functional nervous disease when objective findings do not fit some classical organic picture. Friedreichs ataxia has been mistaken for multiple sclerosis particularly in young individuals. The absence of the characteristic eye signs of disseminated sclerosis, the presence of the abdominal reflex, the diminished knee jerk and the pes cavus of Friedreichs ataxia should be helpful in the differentiation.

Drug treatment is of but little value. Arsenic in the form of cacodylate of

soda and the iodides appears helpful in some cases. Scopolomine will often help control the tremor when it is very annoying. Hydrotherapy, massage and re-education exercises are invaluable and it is our belief that these measures help to bring about remissions.

Discussion.

Dr. James K. Hall, Richmond, Va.

I think Dr. Tucker has given us a wonderfully comprehensive yet concise and thoroughly lucid and attractive presentation of this very obscure condition. I suppose within the domain of neurology there is no other affection so obscure in origin, so varied in symptomatology, so resistant to treatment, as multiple sclerosis. It is one of the strangest diseases, in origin and in manifestation, known to man, I am sure. One of the remarkable features of the condition to which Dr. Tucker has called attention is the almost complete disappearance of all the symptoms, notwithstanding the fact that very widely scattered and profound organic changes in the central nervous system are present as the cause of these symptoms. It is difficult to understand how these symptoms can disappear without any discoverable change in the underlying organic condition.

I am certain that Dr. Tucker will let me say that multiple sclerosis, although a rather rare disease, is probably not so rare as we think, because it is likely overlooked, especially in the earlier stages. It is rare from the point of view of the general practitioner of medicine. It is probably overlooked by the neurologist occasionally in its incipency. I am certain that Dr. Tucker has brought a helpful message to the Association, and I have enjoyed hearing him.

Dr. Tucker, closing the discussion:

I want to take advantage of a minute or two just to bring out several points. In the first place, this condition, as Dr. Hall says, is very much more common than is realized, and I do not suppose there is a man who has had very much clinical experience that has not let one or more of these cases slip through his

fingers. I am including myself in that statement. However, it is very easy to suspect if you bear it in mind.

Another important thing about multiple sclerosis is, as Dr. Hall has emphasized, that there are remissions. I am of the opinion that we very rarely get these cases in an early stage at autopsies.

I think multiple sclerosis is a bad name; so also is disseminated sclerosis. The tissue is not sclerotic, it is soft at first. I am of the opinion that the majority of the cases are infectious in origin, and the remissions, I believe, are due to the re-establishment in these partially affected areas of function. The area being affected function is not thoroughly established, so we have a remission. Another interesting theory is that the etiology is due to trauma. I want to cite a very interesting case. He was a telegraph operator and was using his instrument in a storm and got a sever shock. He came to Dr. Bosch in Richmond, who recognized some symptoms of sclerosis, also that he had an acute gonorrhea. That man sued the railroad for ten thousand dollars, claiming the sclerosis was due to electric shock. I think in that case the sclerosis was due to the gonorrhea. The railroad did not call him as a witness and the man got nine thousand dollars for something for which I believe the railroad was not responsible.

I believe the condition is due largely to infection, but not to focal infection,

NARCOTIC ADDICTION DISEASE VS. THE NARCOTIC DRUG HABIT.

W. C. Ashworth, M.D., Greensboro, N. C.

I have been thinking for sometime that I would read before this Society a paper on the importance of recognizing the morphine habit as a diseased condition of the patient, rather than a habit per se.

It has been my observation, during

*Read at the Greneville meeting of the Tri-State Medical Association, Feb. 20-21, 1924.

my experience of nearly twenty years in treating this class of cases, that a large per cent. of drug habitues are diseased individuals, therefore should not be denominated as "dope fiends," and other humiliating names which tend to discredit and, therefore, to a large extent hamper the patient from seeking and obtaining scientific treatment. It is not my purpose to undertake to change the nomenclature of this class of patients, but on the other hand to emphasize the fact that the continuous use of morphine produces a diseased mechanism that cannot be overcome by the patient unless he receives the most enlightened and up-to-date treatment available at the present time.

It is a deplorable state of affairs that the literature on morphinism is so meager that those of us who are engaged in the work find comparatively little encouragement in the investigation of newer methods for the relief and cure of this class of cases. I am, also, cognizant of the fact that the members of our profession, *as a rule*, are rather unwilling to be bothered with these drug cases, since, as a rule, they appear hopeless, therefore are more of a stigma to the physician than a credit to the skill of his treatment.

When we recognize and believe that morphinism is as much a disease as pneumonia or typhoid, then, and not until then, will we be able to treat these cases in an intelligent manner.

The subject of my paper, "Narcotic Addiction Disease versus the Narcotic Drug Habit," is intended to stimulate all the research possible in order that our work may become more scientific and be removed from the realm of empiricism and routine which surrounds it at the present time. I trust that I may be able to awaken a certain amount of interest in this class of cases, which will enable institutions engaged in this line of work to secure more fully the co-operation of the medical profession as a whole. It is, of course, a rather uninviting field for our endeavor, but we all cannot perform surgical operations that will immortalize us; nor on the other hand can we obtain the halo

that surrounds our brilliant internists, obstetricians, etc. It is obvious that quite a large per cent. of us must continue to engage in the work of man's reclamation of man, and, therefore, we need the encouragement of the profession in a work—the outcome of which is very discouraging—but at the same time is well worth our best efforts.

The average physician, when confronted by the so-called "Drug Fiend," loses his patience, if not his temper, and as a consequence the patient is usually dismissed abruptly, and no treatment is prescribed or advice that is curative in any sense of the word.

When the members of our profession recognize that the drug addict is a diseased person, then the same amount of interest will be taken in the patient as is in the patient who is obviously sick from any other disease.

It is lamentably true that the average drug patient is uncouth, and that his insistent demand for narcotic drugs often makes him a repulsive patient, and therefore objectionable to the physician from every standpoint. It is rather surprising, however, to those who are unacquainted with drug patients, to know that a large per cent. of this class of cases represent men and women of high culture, and the unfortunate drug habit is therefore a result of lack of knowledge on the part of the members of our profession who have possibly treated the individual for some painful disease which required the use of morphine or some narcotic drug.

The narcotic drug was probably discontinued, as the physician honestly believed, in ample time to prevent the formation of the habit, but subsequent events proved very conclusively that the drug was not discontinued sufficiently early to prevent addiction disease.

It has also been my observation that quite a large number of drug addicts trace their addiction to a surgical operation, which operation was performed by a surgeon of indisputable reputation in order to control the painful complications arising from the opera-

tion per se, prescribed narcotic drugs, was dismissed from the hospital, and with the instruction from the surgeon to the family physician to continue to prescribe sufficient narcotic drugs to control the painful complications which develop during or as an aftermath of the operation.

When we take into consideration the number of surgical patients that suffer from painful adhesions, which are only relieved by some narcotic drug, we can realize more fully the number of drug patients that can be traced directly to the surgeon's operating table. Of course, it is not my intention to criticize in the least the surgeon's technique, but, on the other hand, I realize to the fullest extent the complications that may arise from the most trivial operation necessitating the use of narcotic drugs.

Just at this particular time I cannot well refrain from expressing a word of caution to my confere, the surgeon, about operating on neurotic cases, especially the chronic abdomen of the ubiquitous neurotic female.

I have just recently had a very unpleasant experience with two trained nurses whom I admitted as patients for narcotic drug disease, both of whom had been operated upon by skillful surgeons for some nondescript abdominal lesion.

With all due respect to my surgeon friends, and they are truly my friends, I am inclined to believe that a grievous mistake was made in operating on the above named patients. Following the surgical chart of these nurses, I obtained the information that they were both pronounced neurotics, and as a consequence the intervention of a surgical procedure was an egregious mistake for the patients, and resulted in the formation of the morphine habit. I finally succeeded in freeing both of these patients from morphine, but I am sorry to say that I have no confidence in the permanency of the cures, owing to the fact that a neurotic patient greatly exaggerates any discomfort

which to the normal individual would be scarcely noticeable.

I wish to emphasize very strongly the importance of a careful study of a neurotic woman before she is subjected to a surgical operation which may result not only in destroying completely her small residue of earning capacity, but at the same time the great likelihood or risk of engrafting or acquiring the morphine habit as a result following even a comparatively trivial operation.

You will pardon me if I digress also to mention the fact that to me the complete emasculation by a surgical operation of the neurotic young woman, aside from the possibility of all other complications, is a very serious consideration. It is painfully surprising to me that a large number of young women who enter my Institution for treatment, either for mild disease or narcotic drug disease, I find a hysterectomy has been performed, and as a consequence I am at a loss to know whether the deplorable condition of the patient is a case of propter or post hoc.

The above statement is uttered even without the slightest tinge of criticism, but to throw out a warning to our capable surgeons to beware, as much as possible, of the young woman who has the chronic abdomen, with all of its concomitant symptoms.

With the above information before the intelligent physician, it is at once obvious to his mind that the greatest selection and differentiation should be made in all of his cases, who are apparently in need of radical surgical interference. It is fortunately true that a large number of these cases are so palpably diseased that no unusual surgical erudition or acumen is required. Therefore, the surgeon cannot be subjected to undue censure in a large majority of these cases.

If I am correct in my premises, and my conclusions are therefore tenable, I will naturally and properly be placed on the firing line by my colleagues to answer or give some substantial proof of what I might say, for lack of a better word, the worthwhileness of my

treatment for narcotic drug addiction disease.

I no doubt rightfully suppose that the members of this Society believe almost unanimously that my work with drug patients is almost nil in the way of producing satisfactory results. I am ready to concur to a large extent with the profession, but at the same time I am greatly pleased to be able to state that the percentage of my permanent cures is much larger, thanks to the members of the profession and the enactment of the Harrison Anti-Narcotic Law, than during my early experience in the treatment of narcotic drug addiction disease.

If we can secure the full cooperation of the medical profession, and they concur with me in my belief that the drug addiction is a disease, and that the term, "Drug Fiend" has no place in the nomenclature of diseases, I will be better able to cope with the proposition that confronts me at the present time in the management of these cases. Whenever the profession ceases to regard morphanism as a vicious habit, and is willing to recognize a diseased mechanism in lieu thereof, rapid strides will have been made in the successful treatment of drug addiction disease.

I wish to reiterate and emphasize the importance of an early recognition of the drug disease, as the time required for the cure of addiction disease is commensurate with its duration. The chronicity of the addiction disease must be dealt with in the same serious manner as the chronicity of any other disease.

I frequently illustrate what I call a diseased condition as the result of drugs by the apt statement that the finest physical specimen in this or any other country,—Jack Dempsey, for instance, would be an ill man and have all the stigmata of drug addiction disease, provided he used narcotic drugs for a period of six months.

The above illustration simply confirms, or, rather, corroborates my statement that the so-called "Drug Fiend" is in reality suffering from a disease which merits the same consideration as

any other physical or mental disorder. The mental status of this class of cases must also be given due consideration, as evidenced by the fact that the drug patient cannot be successfully treated unless we give due consideration to his personal equation, temperament and idiosyncrasies.

I cannot agree with the over arduous supporters of the Harrison Anti-Narcotic Law that we only have a remnant of drug users in this country at the present time. My records conclusively prove that the army of narcotic drug users is steadily increasing, and that the Harrison Anti-Narcotic Law, or other legislation, is almost a failure in preventing the formation or continuation of the habit. It only confirms the truth that I have always maintained, namely, that you cannot legislate right living or morals for the individual, but, on the other hand, a more fundamental training is required, which pre-supposes a clearer conception of the underlying cause for the formation and continuation of the drug habit.

We certainly are derelict to our duty as members of a humane profession when we disregard the rights of the large number of drug patients that are constantly clamoring for relief of a diseased condition, which demands, as stated in this article, the best and highest endeavor of our noble profession.

It is almost unbelievable that so few of us are sufficiently familiar with all the phases of the narcotic drug problem to enable us to even suggest, much less actually inaugurate some procedure that will be productive of permanent results.

When we take into consideration the enormity of our appropriation for the insane, epileptic, feeble-minded, fallen girls, tubercular, we can appreciate more fully the fact that we have to a great extent disregarded a large per cent. of our population suffering from narcotic drug addiction disease. We cannot denominate these patients as generates or criminals, but must admit that the mental and physical deterioration from chronic narcotic drug disease will be transmitted to the off-spring of

generations yet unborn. We must recognize the diseased condition, if the urge or incentive is to be furnished necessary to stimulate original research, etc.

If I have succeeded in bringing before this Society a neglected part of our professional work, I will feel amply repaid for the time I have devoted to the preparation of this paper.

We all recognize the fact that the progeny of drug patients, if any at all, must be Neuropaths of the most pronounced type.

CONCERNING THE SIGNIFICANCE OF STAINABLE LIPOID (FATTY MATERIAL) IN THE KIDNEYS.

Wm. deB. MacNider, M.D., Chapel Hill, N. C.

I want to present to you this afternoon the results of some work with part of which you are familiar. It has as its central point an attempt to explain why certain drugs act on some tissues and do not act on other tissues and why certain drugs are so much more toxic or harmful under some circumstances than under other circumstances. We all know that different drugs pick out certain tissues to act upon, and we call that the elective affinity of drugs. Nicotine, for instance, picks out certain ganglion cells to act on. Atropin picks out certain nerves to act on and always acts on the same nerve in the same way. Why is that? We do not know anything about the chemical constitution of certain tissues and about the chemical constitution of drugs that explains the affinity of certain drugs for certain tissues. You know, of course, that the general anesthetics—ether and chloroform—pick out one tissue to act on. They do not act on bone, they do not act on skin, but why don't they? They pick out the central nervous system to act on, depressing it, and through that action producing a condition of anesthesia. Meyer and Gottlieb pointed out that as the fat content increases in a tissue they pick out that tissue to exert their action—in other words, general anesthetics pick

out the central nervous system because that system is rich in lipoid material. Perhaps some of you have had this happen to you, that after a general anesthetic of long duration in an operation of not great magnitude perhaps the heart goes bad and death occurs. Or perhaps some of you have had this experience, that you give an anesthetic and after a day or so, when you think the function of the kidney has been restored and urine will be formed in proper quantity and quality, it is not restored and urine will not form, and nothing you can do, perhaps, will restore it. Now, why in one instance does the anesthetic affect the heart muscle and in other cases the kidneys? This investigation has been conducted in the hope of throwing some light on that problem.

In the kidney there are two types of tissue, the vascular tissue, or blood vessel tissue, which winds itself up into the little balls we call glomeruli. Leading off from those balls are the little tubules, which are lined with epithelium. At one place the tubule forms a distinct loop, called the loop of Henle. In these loops fat is always normally present. It is not normal in any other tissue of the kidney, vascular or epithelial. In young animals you find that lipoid there. In old animals, in which the anesthetic becomes toxic for the animal, you not only find this lipoid in the loop, but also find it in the convoluted tubules. In that type of individual those cells take up, as a result of their increased fat content, more anesthetic than the normal cell does, and takes it up sufficiently for the anesthetic to injure or kill that epithelium, and the function of that epithelium is diminished and urine formation impaired. If you take an animal, an old dog or a dog with a chronic Bright's disease, and take out a piece of one kidney under local anesthetic and stain it for fats, you get the control for the amount of fat in that kidney. Then if you will give intravenously an alkali solution, a two per cent solution of soda in nine-tenths salt solution, and take out the rest of that kidney, you will find that the amount of that stainable fatty stuff has lessened or entirely disappear-

ed. I do not know what has happened. in the highest terms of what Dr. MacNider has done. It gives me great pleasure to tell you this.

I do not know whether the alkali affects the tissue chemically, so it will not stain, or whether it has caused the actual disappearance of the fat. If you have caused the change in the lipid content by the alkali or by diet, you can give the anesthetic without its being toxic to the kidney; you can give the same anesthetic and it will not harm the kidney. If you give it without the alkali or the diet, the fat retains the anesthetic and the anesthetic kills the cells.

(Lantern slides shown here.)

I think the observations have certain definite interest in this regard, that they explain why some type of tissue other than the central nervous system is picked out by the anesthetic to act on. Meyer and Gottlieb show conclusively that it picked out the central nervous system because of the amount of lipid material contained. We simply extended it to a tissue with variable fatty content. In a young animal with normal cells apparently an insufficient amount of anesthetic enters the cells to injure them, but in an old animal, or an animal with chronic Bright's or with myocarditis, a sufficient amount of anesthetic enters the cells to injure them. The second thought that is worth while is this—that by the use of a proper diet, carbohydrates or that sort of thing, or by the use of glucose and soda, or soda alone, the fat content of cells will be so diminished that their ability to sop up anesthetic will be diminished and the anesthetic can be given with a greater degree of safety.

Discussion.

Dr. C. M. Byrnes, Baltimore, Md.

This paper is entirely out of my domain and I do not propose to discuss it, but you have all heard what Dr. MacNider has said about the excellent work being done in North Carolina, and I feel that this society is distinctly honored in having Dr. MacNider for a member. His work has been recognized not only locally, but throughout the country. I have heard my friend, Dr. Abel, professor of pharmacology at Hopkins, speak

AN ADEQUATE COUNTY TUBERCULOSIS PROGRAM.

By P. P. McCain, M.D., Sanatorium, N. C.

Notwithstanding the fact that practically all the details necessary for the cure and prevention of tuberculosis have been known for decades, this disease continues its frightful ravages with but little abatement. In our own State last year it caused 2,600 deaths, nearly all of its victims being in the prime of life. Since there are nine active cases for every death, there are 23,400 people in our State now suffering with tuberculosis.

Even though we disregard the subject from the standpoint of our duty as humanitarians and as Christians, and consider it alone as a business investment, it will pay us to do whatever is necessary to bring this disease under control. Counting the value of the lives lost through tuberculosis, the loss in labor and the expense of caring for the sick, a low estimate of the annual economic cost to our State is \$13,000,000.

North Carolina is doing more than any other Southern State to check its ravages, but our people as a whole have not attacked the problem with any degree of earnestness. What is the trouble? We cannot say it is lack of money when our legislature last year appropriated \$50,000,000 for the building of good roads, their action being applauded by the majority of the people in our State. We do not believe either that it is altogether because they do not realize that good health is vastly more important than good roads. Our people do not believe in halfway measure. And we believe they will cheerfully finance any plan for the control of Tuberculosis,

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which will give promise of solving the problem.

In our State, which is largely rural, the county must be made the unit in the organization both for the prevention and treatment of tuberculosis. The following, we believe, comprise the essentials for the unit:

1. A county sanatorium.
2. Clinics, which are largely for diagnosis.
3. Visiting tuberculosis nursing service.
4. A live County tuberculosis association.
5. An efficient county health department.

It is universally recognized by those who have studied the tuberculosis problem that the sanatorium is a necessity. It is the bulwark around which all other factors in the fight must center. The state sanatoria, most of them, are splendid institutions and they do now and will always serve most useful purpose in the control of tuberculosis; but it is impossible for state institutions alone to meet the needs. The advanced cases should not be taken a long distance from home where they cannot get to see their loved ones; and many others who could not be persuaded to go to a sanatorium at a distance would be willing to go to one in their own county.

To be successful the sanatorium must be a first-class institution from every standpoint—good enough for ourselves or for our loved ones. It must be equipped with an X-ray, a laboratory and all other facilities for the diagnosis and treatment of tuberculosis, and it must have a capacity sufficient for the needs of both the whites and negroes.

All the larger counties, probably those of 30,000 or more population, should have such a sanatorium. Two or three of the smaller counties can erect one together, or each of the small counties can erect a building for its patients at the State Sanatorium. The former is a much more satisfactory plan, but either would go far toward solving the problem for the county

which is too small to have its own institution.

The funds for the building and equipment of these sanatoria should be raised by sale of county bonds and for their maintenance by a special tax, which should also be sufficient to take care of the interest on the bonds. The cost, just as is the case of the public schools, will be paid by all and will not be burden on anyone. In this way it will be freed from the odium that is usually attached to a pauper or charity institution. There is no more reason why one should hesitate to go or to send a loved one to such a sanatorium than he does to send his child to the public school or to accept the payment on a health insurance policy when he is sick. Those who are able should pay the full cost of maintenance and probably all should be required to pay something. Needless to say they should all be treated exactly alike regardless of the amount paid.

But no matter how fine the Sanatorium buildings may be, its success will depend largely upon the man at its head. He must be an expert in the diagnosis and treatment of tuberculosis; he must be a man of at least fair business ability; and he must be a man who knows how to get along with folks and who loves his fellow man. Such a man will command the respect of all and will secure the cooperation of the physicians throughout the county. If he is capable of teaching there is no reason why, with such a wealth of clinical material at their doors, every physician in the county should not become proficient in the handling of tuberculosis. The more fully this can be accomplished, the simpler the problem becomes.

The success of the sanatorium will also depend very largely on its board of directors. This board should be representative of the medical, the governmental and the lay forces in the county. It probably should be comprised of the county health officer, at least one other physician selected by the county medical society, the chairman of the board of county commissioners, a member selected by the county tuberculosis asso-

ciation, one from the women's clubs, and a live business man, probably a man selected by the chamber of commerce. Such a board will link up with the sanatorium the people and the organizations of influence and ability throughout the county.

Since an early diagnosis is the most important step in the cure of tuberculosis and also the prevention of its spread to others, clinics for diagnosis constitute one of the most important factors in the handling of the tuberculosis problem. These clinics should be held, if possible, by the superintendent of the sanatorium and certainly under his supervision.

The physicians of the county need to be made to understand that the functioning of such a plan will not destroy their tuberculosis practice, but that it will on the contrary increase it by giving them the opportunity of becoming more proficient in the diagnosis and treatment of the disease. There will be such an awakening of interest in the prevention and in the early discovery of tuberculosis among the whole population that the number seeking examinations will be increased many times. In fact there will be a large number who as a matter of precaution will adopt the sensible plan of having periodic physical examinations.

These clinics will accomplish the most good if the physicians will look upon them as an opportunity for free expert consultation and will either bring or send them their doubtful cases. A clinic should be held each week either at the sanatorium or at the county seat for both white and colored patients. Of course it should be understood that all who are not able to employ a private physician should be encouraged to come to those clinics. One of the most important features of these clinics also should be the examining of the other members of the family wherever an active case is found. In this way many cases will be found in the early stage which otherwise become advanced before being discovered.

If these clinics are supplemented with

a live educational campaign emphasizing the symptoms of tuberculosis and the importance of all persons with these symptoms being examined, there is no reason why practically every case of tuberculosis in the county should not be discovered in time to be cured.

To supplement the work of the sanatorium and clinics it is necessary to have an adequate visiting nursing service. Every case of tuberculosis should be reported to the superintendent of the sanatorium, who should send a nurse especially trained in the handling of tuberculosis to each case reported. If she is tactful, patient, sympathetic and efficient, there is practically no end to the good she can do. She can impress one with the seriousness of the trouble and at the same time inspire hope for recovery. She can emphasize the importance of rest and sanatorium treatment and teach dangers of patent medicines and fake cures. She should furnish the necessary sanitary supplies and literature on the cure and prevention of tuberculosis and teach the patient all the details of carrying out these measures. She should immediately make arrangements for the other members of the family to be examined by their private physicians or at the clinics. After gaining the confidence of the family, she can often by inquiry also find other suspicious or definite cases in the community.

A live county anti-tuberculosis association should be an important feature of the county program. It should function in close cooperation with the State and national anti-tuberculosis associations. Some of its more important duties should be: the conducting of an educational and publicity campaign; securing the interest of the influential people and the useful organizations, such as the churches, the Rotary, Kiwanis and women's clubs and the fraternal orders; managing the sale of the Tuberculosis Christmas Seals; looking after the needy families of the mothers or fathers who are sick; securing proper work for arrested tuberculosis patients; and the securing of the passage and the enforcement of adequate legislation for

the prevention of the spread of tuberculosis.

Since the prevention of tuberculosis is even more important than its cure, and since prevention consists not simply in minimizing the distribution of tubercle bacilli, but also in maintaining the highest possible bodily resistance in order that the thousands already infected may not develop the disease, the problem of the control of tuberculosis is closely interwoven with the whole problem of public health. Without a live county health department, therefore, any tuberculosis program could at best be only partially successful. But close cooperation between the superintendent of the tuberculosis work and the county health officer and the various divisions of their departments will cut the death rate both from tuberculosis and other causes to the irreducible minimum.

Since children are especially susceptible to tuberculosis infection, it is necessary in our tuberculosis program to lay great emphasis on these phases of the public health activities which have to do with the general health of the child. An effort should be made to wipe out diphtheria by means of toxin-antitoxin and to prevent the other childhood diseases during the age period when their danger is so great. Among the exciting causes of tuberculosis, undernourishment has been found to be one of the most common. Special emphasis, therefore, should be laid on the nutrition clinics, in which an effort is made to discover and remove the cause of undernourishment. The importance of the medical inspection of schools and the removal of the defects found cannot be overemphasized. The Modern Health Crusade should be given all possible encouragement and assistance, for no agency has ever been so successful in teaching both the children and their parents the essentials of healthy living and in getting them to practice the rules of the game. This organization had an enrollment of 70,000 in North Carolina this year and we hope it will rapidly increase until it shall soon enroll every child in our schools.

Such a program is not simply idealistic but is altogether practicable. Guilford and Gaston Counties have already voted bonds and a special tax for the erection and maintenance of a county sanatorium, and we understand they are contemplating the adoption of some such plan for the handling of their whole tuberculosis problem. As soon as the other counties in the State see this program in action in these pioneer counties, we believe they will rapidly follow their example. The State Tuberculosis Association and the Tuberculosis Bureau of the State Board of Health are heartily in favor of this program and they will lend the force of their energies toward making it a success.

MEDICAL SCIENCE VERSUS MEDICAL EMPIRICISM.

M. F. Frizzell, M.D., Ayden, N. C.

Leuwenhoek, a Dutch microscopist, on discovering in 1680 microorganisms in decaying vegetable infusion, established the first principle in the foundation of that science which treats of germs or bacteria. In the following two hundred years his successors collected sufficient scientific facts to establish the balance of the fundamental principles of this science, so that when Koch, the great German physician and scientist, and Pasteur, the immortal French chemist and bacteriologist, appeared in the latter part of the nineteenth century. They directed their efforts in behalf of mankind to the building of the superstructure of bacteriology and therein laid or formed the true basis of medicine as a science.

Prior to this epochal period in the history of medicine, empiricism had dominated, through all the ages of human existence, the practice of medicine. Every physician of those times was an experimenter, destitute of adequate knowledge. Science without theory as a

Read before the Pitt County Medical Society at Greenville, N. C.

basis is impossible. Quackery, there, fore, was the natural, inescapable order of those ages by reason of the fact that empiricism was nothing more than practice without knowledge, a practice founded upon an experience which could not transcend observation. Accordingly, medical truths were scarce and superficial, and diagnostic skill was pure pretense.

But with the basic principles of theoretical medicine in hand, as given by the pioneers of medicine between the years of 1680 and 1890, medical scientists began research work with vigor, and during the last quarter of a century their accomplishments in the evolution of medicine have been marvelous. Already mastery of a number of diseases has been acquired; and evolving from growing accumulation of scientific data is the optimistic vision of mastery of all disease in the course of time.

It is a fact, however, that this scientific work is going on exclusively in the great medical centers of the world. This is noteworthy in that it indicates that only our medical centers are equipped with the facilities for this work, an equipment which is necessary to do research work, not only, but to practice medicine efficiently as well. It further indicates by reason of the fact that the bulk of the doctors of the world are practicing medicine in agricultural sections of states, rather than in medical centers, that the majority of physicians are living working under adverse circumstances by not having direct access to instrumental facilities for the scientific practice of medicine, and the inevitable result, under such circumstances, is unscientific, inefficient service.

This state of affairs is unfortunate. It is unfortunate to the doctors in country practice because of the limited opportunity given to keep abreast with progressive medicine; it is unfortunate to the people for whom they practice because they are the victims of results incident to this absence of modern facilities which alone prepare physicians

for accuracy in diagnosis and intelligence in treatment.

Thus it is seen that in rural sections of America empiricism still remains a factor in the life of our people. And it remains a factor here by reason of the fact that there has never been any propaganda for its extirpation nor organized effort to establish any laboratory institutions in the agricultural sections. Individual development and general progress of the people have been, and are yet, retarded by the hostile attitude to any common enterprise requiring expenditure of public money for its establishment. This has been due to financial and educational poverty.

But the organization of the agricultural masses for the cooperative marketing of farm products probably means a new era in the agricultural and industrial life of America; and with a general financial and educational expansion the hitherto unfriendly attitude to humanitarian enterprises will doubtless be supplanted by a favorable attitude. And the system of good roads which are today permeating this country, plus motor utility, can but increase opportunities to utilize such institutions for the betterment of our people.

With or without immediate general prosperity, however, the time is here when the practice of medicine unscientifically can little longer hold professional respect or hold public confidence. Unquestionably people are awakening to the fact that medicine in rural sections is not upon a modern basis, and they are beginning to realize the impossibility of physicians of those sections to give efficient service. You evidence such conception by sending from time to time your sick from empirical hands to medical centers for accuracy in diagnosis and efficiency in treatment. You recognize our helplessness in empiricism can never be supplanted in our county or country by scientific medicine so long as the county-community remains without medical laboratory facilities as found in our medical centers.

Most of us physicians here today have been practicing medicine for years in

this county, the county which is now classed by authority as one of the fifty richest agricultural counties in America. As a body I do not believe there is a better qualified force in rural practice anywhere, all being graduates and postgraduates of the leading schools of medicine; yet up to this very moment empiricism, rather than scientific medicine, has characterized our practice.

There is no class of people so keenly aware of this condition as physicians. Deeply conscious of incomparable responsibility in service, a service upon which hope, health, happiness and life depend, the medical profession of agricultural sections everywhere acknowledges its inefficiency. Down deep in the heart, back of this acknowledgement, is ambition, an ambition to improve, and ever improve, service to fellowman. There never was a time in the history of the world when efficiency was so much demanded in all fields of endeavor as is found today. The motto of this age is EFFICIENCY.

Wherever inefficiency is existing, its cause must be determined and the remedy applied. Happily the cause of inefficiency in rural practice of medicine is known and happily the remedy is known. The cause is the lack of laboratory facility for diagnosis of numerous complicated, obscure, baffling disease in general practice; the remedy is the establishment of a County Medical Laboratory to provide this needed facility.

To a people in the forward march of times nothing could mean more than the operation of a county medical laboratory. It required medical laboratories to place urban medicine upon a modern basis; it will take medical laboratories to place rural medicine upon a modern basis. I advocate the establishment of such an institution in Pitt county.

I advocate the establishment of this institution because only it can put rural medicine where it belongs. I advocate this measure because it is indispensable to maximum welfare of the people. I advocate it because its operation will accelerate all health projects and inure to the people's profit. An institution like

this, in our own county-community, will enable the physicians to stop sending undiagnosed cases to distant medical centers for diagnosis and save to our people the great financial loss and worry incident to long voyages for the restoration of health. A medical laboratory, equipped with all of the modern instruments for the various scientific examinations, manned by modern skill from the highest sources, can be operated in one place or locality as effectively as in another. Blood analysis, analysis of stomach contents and tissue, X-ray examinations and other numerous laboratory aids to diagnosis and treatment should be in daily service in every county throughout the country.

The cooperation of such an institution is fundamentally essential to first-class work in any and all sections of the country. An institution to which the white and black alike, to which the rich and poor alike, without cost or profit to anybody, may go by order of the attending physician when in need of laboratory illumination will be a God-sent blessing. Built by the county and maintained by the county, there will be no direct cost, general taxation bearing the expense. It will be a philanthropic investment for a humanitarian service. And from the operation of this institution will arise an atmosphere of quality and confidence and from it will come the coveted opportunity to improve service to humanity and to grow abreast with the progress of medicine.

It is very difficult to fully grasp the possibilities of the service which this institution will give in the conservation of health or in the production of energy, vigor, wealth and happiness. And it will never require the expenditure of a great amount of money. Renting some adequate floor space for a period of ten years would be better at this time than building, for it is possible that public interest in public health work will soon so advance within the next decade as to create public vision of the vital need of a county hospital and in such event it might seem advisable to have the county medical laboratory physically connected thereto,

Being careful to not underestimate the total expenditure required for this project, I have computed the aggregate cost of equipment at \$8,000.00, and the cost of operation at \$7,000.00 per annum. While this is a very small outlay of money for the establishment of any public enterprise there can be no shadow of doubt as to unfailing dividends annually accruing therefrom in the protection of health and in the prevention of unnecessary diseases.

The trend of all health and social organizations is to prevent disease and save needless loss of time and earning capacity. State and national law-making bodies are as never before showing interest in conservation of human resources. Our last Legislature enacted into law a bill requiring all candidates for wedlock to have health certificates. No man of thought questions the wisdom of that law. It is the long-needed step forward to endow the unborn child with the inalienable right to be parented by sound health. Is there any law of the State which merits more painstaking care in its fulfilment than this law forbidding the unfit to marry? And yet without county laboratory facilities physicians are unprepared and unable to fulfill this law. For only the most active infections can with the naked eye be positively recognized; the latent, inactive infections, though very perilous, cannot be identified, usually, with the facilities of general office equipment. Medical laboratories go to the "bottom" of these cases and accurately ascertain their nature, their virulence and their danger. In the upbuilding of community health and the stamina of unborn generations who knows the value of a county medical laboratory? The satisfaction of knowing that your daughter is marrying a man of sound health has

what value and comfort for your home? The satisfaction of knowing that your son is marrying a woman of sound health has what value and comfort to you? Every home, rich or poor, sooner or later, has occasion for the need of such assurance and I declare unto you that for healthful soul and body the county medical laboratory is second in importance and power to food, water and air, only.

This is a matter which deserves serious thought. When you look into the situation closely and observe the small expense to the county which such an institution will entail; when you reflect upon the expenditure of time and money hitherto required in visiting distant centers for special consideration; when you gauge and comprehend the importance of guaranteeing to future generations healthful origin and the necessity of protecting subsequent development, such an institution in our midst seems to be indispensable. Scrutinize the statement that hundreds upon hundreds of our poor in this county from year to year have no available funds with which to seek scientific succor in distant cities for restoration of usefulness, causing unfortunate prolongation of suffering and the elimination from the body politic of their earning capacity, thus affecting the family unit efficiency, likewise the county unit efficiency, to say nothing of the unnecessary, untimely, pathetic deaths arising from this want of funds for adequate professional attention, and its immediate establishment seems to be imperative. It is unquestionably the step that should be taken. Progressive professional service in medicine requires it; expanding public health work demands it.

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J. C. MONTGOMERY, M. D. } *Editors*

CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

Sub-Privileged Children.

It is axiomatic that the greatest possible asset of any nation, any state or any community is its citizenship. No community standards can possibly surpass its average individual standards. All other assets can only be utilized by the individual and the degree to which they are utilized is in direct proportion to the capabilities of the citizenship.

It therefore follows as truly as night follows day that the nation, the state or the community which excels in progress does so by first building up the standards, the morals and the education of its children. In the main people will have exactly what they want and when the leaders of the people educate the people to want certain things they will have those things. Practically speaking then the education and development of the children is really the only thing which needs vitally concern any government.

With that done the coming citizenship will naturally and most certainly accomplish the ideals they have been taught. The trouble with most of us is that we get the cart before the horse and do not start real progress where progress really starts.

If then education—moral and intellectual—is the fundamental basis upon which all progress is built, this education should be universal and thorough. Every child must be taken into consideration and in so far as possible the handicaps of the sub-privileged child must be removed. Those children whose moral environment is bad should be given an insight into, and an inspiration to attain the higher and better things of life.

Those children who have physical defects which handicap endeavor should in so far as possible have those physical defects corrected. Those children whose life blood does not run red because of insufficient or improper food should have that deficiency supplied.

The sub-privileged child must not be forgotten nor allowed to drag along behind. Parents have no greater duty to their offspring than the state has for its children—indeed, selfishly speaking, they have not nearly so much. The life of the parent is self-limited and the achievement of the child can influence but little the parent, while the future life of the state depends entirely on its children. The parent, because of parental love, gives his life for his child, asking nothing in return, while the state must depend for its very existence upon the children it nurtures today. That is why the state must step in and do for its children what the individual parent may be unable, or, because of ignorance, unwilling to do. The parent's extremity is the state's opportunity. If the state provides schools and compels attendance thereat, then by all right and justice she must remove the handicap of the sub-privileged child. To compel a child to go to school, whose physical condition is such that it cannot keep abreast of its fellows is not only brutally cruel to that child and is wasting state's money but may actually so embitter that child against society that a criminal is developed instead of a helpful citizen.

In so far as parents have knowledge they should be responsible for the correction of these defects or under-privileged children, but where they don't know, or where they won't, or can't, then the state must.

Where the parents do all they know or all they think should be done then the state, because of its superior obligations and enlightenment, should follow up and inspect and check up. By this and by this alone will the sub-privileged child be given an equal show or an honestly square deal. By this and by this alone will the state guarantee to itself future progress and indeed, its very future existence.

Doctor Simmons Retires.

Dr. George H. Simmons retires after twenty-five years as editor of the Journal of the American Medical Association in his seventy-third year. At a banquet in his honor at the Congress Hotel, Chicago June ninth he was presented with his portrait in recognition of his wonderful service to the medical profession, medical educators and to medical literature. Dr. Simmons has fought heroically for the cause dear to his heart and has succeeded in building up the most powerful medical organization in all history.

The A. M. A. has with its tremendous power put out of business many forms of deceit which had preyed on the public in the guise of medicine. His name will go down in history as an outstanding figure of his day.

We extend to Doctor Simmons our heartiest congratulations and express a sincere wish that he may yet for many years enjoy the satisfaction of seeing the work he has been doing carried on by others as he would wish it.

MEDICINE

Wm. B. Porter, M. D., Dept. Editor.

Reducing the Number of Typhoid Carriers.

The detection and control of chronic carriers of typhoid and closely related diseases must remain an important factor in reducing to a minimum the morbidity and mortality so long as we cannot have ideal prophylactic inoculation. In the May number of the Indian Medical Journal, Major J. H. Cruikshank, director of the Pasteur Institute of Southern India, discusses this important subject and adduces some very interesting evidence. 1886 British soldiers convalescent from the enteric group of fevers (typhoid and para-typhoid) passed through the writer's hands at a certain Enteric Depot toward the end of the war. Of these who had been inoculated with either typhoid or the triple vaccine and had subsequently de-

veloped either of the enteric fevers, .5 per cent were found to be carriers. Of the uninoculated 3.2 per cent were carriers. Evidence is introduced to show that but for inefficient or incomplete inoculation in certain of those listed as inoculated the disparity would have been even greater. Logically he proceeds to the important advice that vaccine therapy be given in these diseases, especially in those not previously inoculated, with a view to still further reducing the output of chronic carriers.

Explaining Sudden Deaths.

Sudden, unexpected death is always a matter of interest, and though most frequently it is ascribed to "heart disease", the evidence nearly always ranges from non-existent to insufficient. In a J. A. M. A. review of a report by Haberdar necropsies done on 11,000 persons who had died suddenly and "naturally" in Vienna over a period of 10 years. It is somewhat startling to note that 125 of these deaths proved to have been occasioned by poisoning, and much more so to discover that some who had not been confined to bed had died of lobar pneumonia and others of meningitis. Affections of the heart and aorta were very frequent. Brain tumors were found in 31 cases.

SURGERY

A. E. Baker, M. D., Dept. Editor

Excision of a section of each of the ribs of one side of the chest without penetrating the pleura is a surgical procedure which, though introduced many years ago, has been favorably reported for only a few years and is by no means commonly used or known. Dr. Carl Hedblom's presentation of an essay entitled "Extraplural Thoracoplasty in the Treatment of Bronchiectasis" to the Clinical Congress of the American College of Surgeons, 1923, and its publication in the latest number of Surgery, Gynecology and Obstetrics, should serve to remind surgeons and physicians of this very efficient means of attacking

cases of cavity formation in the lungs which have persisted over many months showing no evidences of a tendency to heal.

The long drainage period in a large proportion of cases in which the pleura is opened, and the high mortality and great deformity of the Schede and Estlander methods, have made us loath to advise them, and, has perhaps unduly prejudiced us against any major chest operation.

The operation is done in stages from two to five ribs being resected at one sitting, local anesthesia (95 per cent alcohol injected into the inter-costal nerves which produces anesthesia over several weeks) supplemented by gas-oxygen if demanded.

Dr. Hedblom reports 18 patients with bronchiectasis operated in the past three years. All the patients were alive at the time of the report. None had lost the use of arm or shoulder. None presented marked deformity. With one exception all show gain in weight and lasting improvement in general condition.

This operation has been used with marked success by some of the more resourceful of our surgeons in cases of unilateral phthisis with cavity formation and adhesion of the pleural surfaces. It deserves careful consideration in any diseased condition of the lung, which is unilateral, stationary over many weeks and very productive of sputum.

Gynecology and Obstetrics

Robert E. Seibels, M. D., Dept. Editor

The Danger of Pregnancy in Heart Disease.

In the latest number of the Medical Clinics of North America, Dr. Grant Campbell, of Montreal, deals with this important subject. According to him by far the largest group show mitral stenosis, have considerable dyspnea and require careful observation for symptoms which may demand interference with pregnancy. His experience is in accord with that of the many who are confident that the danger of an anes-

thetic are not as great here as in other surgical procedures. Though chloroform in varying quantities was usually the anesthetic of choice only 1 out of 159 showed alarming symptoms and those promptly responded to stimulation.

He is of the opinion that pregnancy should not be allowed to go to term if signs of decompensation present themselves early in pregnancy.

Those showing auricular fibrillation and those diagnosed as myocarditis share with mitral stenosis the strong tendency to be adversely affected by pregnancy.

This writer concludes that victims of the first two should not marry and that if pregnant should be aborted and sterilized; that a woman showing mitral stenosis without evidences of myocarditis may bear one or two children under careful supervision and that the other valvular abnormalities are not much affected by pregnancy.

Eye, Ear, Nose and Throat

J. P. Matheson, M. D., Dept. Editor

The Non-Surgical Management of of Squint.

In an address delivered by invitation before the Tennessee State Medical Association, April 1924, Dr. Luther C. Peter of Philadelphia summed up as follows:

1. Aim to effect a cure of squint if possible, by non-surgical measures.

2. If surgery becomes inevitable, institute non-surgical treatment before and after operation, in order to make the operative procedure curative rather than cosmetic.

It will be impossible to attain to these high ideals in all cases, even though a fusion faculty may be present. You will all agree, however, that our failures in effecting cures in which success is potentially present, can be much reduced by greater attention to details. These essentials are:

1. The opportunity for study in infancy and early childhood when the chances for developing a fusion faculty are best, and the prevention of amblyo-

pia is possible.

2. Careful refraction which must be followed up from year to year.

3. The prevention of amblyopia or its correction by suitable training.

4. Training of the fusion faculty by means of the amblyoscope.

5. Fusion training after operation by means of the stereoscope.

Orthopaedics

Alenzo Myers, M. D., Dept. Editor

Foot Displacements and Weight Bearing—Dr. R. F. Patterson, J. A. M. A., 5-3-24.

Patterson states that anything that weakens any one of the four groups of muscles maintaining foot balance will allow the opposing group to get the upper hand and produce distortion. This must be prevented by appliances or operations to restore the balance. He further states that bony deformity prevents their normal action and must therefore be corrected. In all fractures near the ankle accurate reduction with restoration of the normal alignment and weight bearing line is absolutely essential. Most deviations from paralytic, static or congenital conditions can be corrected and held by braces before bony changes take place. Skeletal operations are usually necessary after bony changes or fixed deviations have occurred.

J. S. Gaul, M.D., Charlotte, N. C., Staff Meeting Mercy Gen. Hosp., June 5, 1924. Importance of Restoring Normal Relationship of Structures In Fractures of the Lower Third of the Radius.

Gaul pointed out the necessity of restoring the normal inclination of the angle made by the plane of the articular surface of the radius to the axis of its shaft; the reposition of the scaphoid, semilunar and cuneiform bones; and the maintenance of the normal joint space and the carpal and metacarpal arches. The failure to attend to these details results in painful dorsiflexion, loss of ulnar flexion, and of the gripping power of the hand. He further pointed out in

fractures involving the lower ends of both bones, where synostosis may develop, the advisability of splinting the forearm in the position of thirty-five degrees of pronation. This position gives the maximum of function obtainable with a synostosis of the ulna and radius.

Pediatrics

Frank Howard Richardson, M.D., Dept. Ed.

The question of pasteurization of milk is one that seems, like the poor, to be always with us. Whether it will ever be settled, short of the millenium, is an open question. It is interesting to note that, as a general thing, the Public Health workers seem to put great dependence upon the virtues that they feel were in the pasteurization of milk. The pediatricists, on the contrary, are coming more and more to the belief that pasteurization is not by any manner of means the cure-all that its sponsors have let us think it, and that the uniformed laity seem so sure that it is. They feel that the attempt to substitute any method of cleaning milk that has been allowed to become contaminated, is at best a pretty poor substitute for keeping it uncontaminated in the first place; for it is manifest that if there were not something pretty bad about the milk that it is proposed to pasteurize, no one would for a moment consider the costly, cumbersome, and by no means trustworthy process of pasteurization at all. Some of the less reverent among opponents of pasteurization have been so unkind as to suggest the substitution of the more accurate term "partial disinfection" for the more pleasing one that has been named after the great French scientist,—well knowing that the laity, who are by no means fools in matters of public health and preventive measures, would be quick to see the point involved if the less appetizing but more truly descriptive term were to be employed. The great argument against having milk produced in a cleanly manner, such that it will not need to be rendered less dangerous by any processing

later on, is of course that the public would not or could not pay the increased milk producers. This is of course not on-price that would be necessary if standards of cleanliness were demanded of by an assumption, pure and simple, on the part of self-appointed spokesmen for the public, which might in common fairness be allowed to be vocal in its own behalf after having the issue of clean milk versus unclean milk placed before it; it is a statement squarely at odds with the truth as it has been demonstrated over and over again, whenever the attempt has been made to improve the quality of a public utility necessary to health. The community does not grudge what it has to spend to safeguard the purity of its water supply and wherever a doctor has been convinced of the superiority of a carefully inspected grade of milk over the common variety being supplied his patients, and has set this superiority before them, he has been amazed to find how easily he has been able to make the use of such a guaranteed milk universal among his clientele. Whether such a recommended milk be labeled "Certified," "Inspected," "Guaranteed" or whatnot; or whether it be that the physician knows and tells his patients that Mr. A. or Mrs. B. has healthy cows and keeps them clean and takes good care of the milk produced, matters not one iota. The great point, which may be observed every time a physician makes such an attempt to recommend a good milk, is that the public have confidence in the doctor's word, just as they have in his word about the purity of the water supply, or anything else that he gives the seal of his approval to. And the doctor who lets it be known that, while he advises the most expensive milk, or food, or medicine, for Mrs. X's family and her baby, he advises Mrs. Y. to use something inferior because he thinks she cannot afford the best,—is in for a bad quarter of an hour when the news filters around to the lady whose financial standing he has taken it upon himself to diagnose, unasked!

It comes then, as a very refreshing

experience, and one auguring well for the future of this State, that has never hesitated in deciding what is the best health measure to take, while it looked around to see what other commonwealth were daring to do, to find that the Bureau of Sanitary Engineering and Inspection of the North Carolina Board of Health has addressed the following letter of inquiry to the children's men of the state:

My dear Doctor:-

It is our desire to obtain the best current thought on the much discussed subject of the pasteurization of milk.

Pediatricians are often referred to both individually and as a profession by those advancing arguments for or against pasteurized milk for babies.

Your opinion, therefore, with regard to whether or not, for baby feeding, you favor pasteurized milk, *assuming that it is properly pasteurized and handled* (italics ours!) will be greatly appreciated.

In the intensive educational work in milk sanitation that is being undertaken by this department a knowledge of the opinion of pediatricians on this subject is considered valuable.

Thanking you for your kindly co-operation in this matter, I am,
etc.

The following letter, written in answer to this most fair and highly creditable attempt on the part of the Board of Health to find out the opinion of the men charged with the health of little children and best situated to observe at first hand what they best thrive on, illustrates what may be taken as one side of the argument. We shall be glad to publish a fair statement of the other side, if any pediatrician can be found who will take the other side of the question. A letter addressed to the editor of Southern Medicine and Surgery will receive fair treatment in a dready publication. The "anti-pasteurization" letter follows:

May the 18th

H. E. Miller, Esq., Director,
Bureau of Sanitary Engineering and

Inspection, North Carolina State Board of Health.

Dear Mr. Miller:-

Your question relative to the feeling of pediatricists with regard to pasteurization comes so close home to me that I am answering your question in some detail.

I do not believe we shall ever solve the safe milk question, until we clearly face the fact that it is relatively immaterial what the process of pasteurization does to milk,—except that it does not render an unsafe milk safe, a dirty milk clean, or an infected milk sterile. These ideas are all widely prevalent, due perhaps to the linking of the name of the famous French scientist to the process, as well as to the enthusiasm evidenced for the process by so many of the Public Health men as the best safeguard available.

My own feeling is that it is for a community, or a group within a community, to decide for itself whether it will have clean milk and pay what clean milk costs, or be content with dirty and unsafe milk; which is an alternative that has rarely been stated in this clear way before the people. Given such a statement, I do not believe many North Carolina communities would choose the unsafe supply.

I do know very clearly, and I have yet to hear this disputed by either a doctor or a farmer, that there is no known method or process that will render a dirty milk clean, and yet, when we who are supposed to know this say that pasteurization is necessary in a community, we allow people to believe that we consider pasteurization a method of making dirty milk safe and clean. If we would say that clean milk can be safely used as it is (though for reasons of digestibility many pediatricians, prefer to boil all milk for young babies); while dirty milk, although it never can be made either clean or safe, can be rendered less dangerous by boiling, we shall at least give our public a more honest and accurate idea of the true situation than is ordinarily conveyed to them when this much-mooted subject is discussed publicly.

There is little doubt that there was a time, years ago, when the milk supply of the big urban centers was so wretched, that it could not help being improved by any measure that would reduce the number of disease-producing bacteria, which is about as much as the most sanguine advocate of pasteurization cares to claim for this process, since it has been found experimentally that calves fed upon pasteurized milk have developed bovine tuberculosis, the disease against which the process was originally devised. But to use that as an argument a State like ours, which has been a leader in the latest and best sanitary advances, and which has no problem of vast congested urban populations, should be willing to put up with a milk supply so dirty that it can be improved by such an uncertain method of semi-disinfection, is about as timely and up-to-date as to urge dirt roads for our highways, and cobblestone streets for our cities. With a population distributed as ours is, with fifty or sixty thousands our largest aggregation of city dwellers, there seems no good reason why each of our counties should not strive for such a record as that established under the efficient Health Officer of Greenville County, S. C., Doctor Smith, whose efforts have made the whole milk supply approach the standards demanded for milk certification. Any doctor who desires his patient to have milk pasteurized may order this done in the home, where it can be done efficiently and properly with little trouble but let him have it served to the patient clean, whatever is done to it later.

I know of no way in which this whole subject could be clarified better for the medical profession, the law-makers and the lay public, than for the State Department of Health to release some such bulletin as the following, for publication as a news item of general interest in every paper in the state of North Carolina:

The only way to get CLEAN MILK is to keep out dirt, especially cow manure and human excrement from the

hands of the milkers.

If milk once becomes soiled, it can never be cleaned again.

Milk can however, be disinfected; either completely, by boiling; or only partially, by pasteurizing. Boiling and pasteurizing, do not clean milk, they only kill some or all of the disease germs, leaving the dirt unchanged.

Keeping milk clean is possible, as any farmer knows. It is also more costly than producing dirty milk. It means among other things:

- (a) Healthy cows, especially tuberculin-tested cows.
- (b) Frequent washing of milkers' hands, especially after using the toilet.
- (c) Clean stables
- (d) Scalded utensils
- (e) Prompt delivery
- (f) Continuous icing
- (g) In short, continuous care and cleanliness from cow to consumer. All of these cost the farmer, and hence the consumer.. But with out them, clean milk cannot be obtained.

Neither boiling nor pasteurization will take the place of any of the above measures for cleanliness.

Please check whichever of the three statements below you believe, and mail it to the State Department of Health, Raleigh, N. C.

1. I would like to see clean milk made compulsory in this community, whatever it costs, just as I like to have other food supplies safeguarded, at whatever cost is necessary.

2. I would like to see pasteurization of all milk made compulsory.

3. I would like boiling of all milk made compulsory.

Feeling as I do in this matter, you can readily understand that I feel still more strongly along the same line, in my feeding work with infants, sick children, and well children too.

Hospital and Sanatorium

John Q. Myers, M. D., Dept. Editor

What of the Management of the Hospital.

It is the ideal of nearly all medical school men to have control of the teaching hospital. This ideal is attained in the University of Virginia Hospital. The superintendent of the hospital was chosen by the president of the university on the recommendation of the dean of the medical school. He was elected by the Board of Visitors appointed by the governor of the state. He is answerable to the president of the university, to whom all the faculty are likewise answerable. He will remain superintendent just so long as his services are satisfactory in carrying out the policies laid down by the president and the board. This means that he must administer the affairs of the hospital as a teaching institution and do it in harmony with the requirements of the medical men as to the care of patients, and satisfactorily to the president and his board on the financial and physical sides. This looks as though it should make for a high degree of efficiency, excellence and economy.

Every day physicians from all over the state come to the hospital on business for patients from their home practice—patients they have sent in.

Just now plans are being made that will permit rather large groups of practitioners to visit the hospital for something like post-graduate work. It is proposed to set aside one period of, say, two weeks for surgery and the border line types; another period for internal medicine; another for obstetrics, and still another for the diseases of childhood. The visitors will walk the wards with faculty members and participate in the study of interesting cases; there will be lectures by the clinical teachers and by the laboratory heads. Each evening there will be a smoker and general discussion of the day's events.

By and by it is the intention to extend invitations to these conferences to phy-

sicians in adjoining states and thus extend the usefulness of the institution to the whole South.

Mental and Nervous

James K. Hall, M. D., Dept. Editor

A Great Medical Organization.

The American Psychiatric Association is one of the most efficient medical organizations in North America. Its membership includes physicians most learned in mental diseases in Canada as well as in the United States. At the recent eightieth annual meeting held in Atlantic City papers relating to almost every conceivable type of conduct, normal and abnormal, were read and thoroughly discussed. The members of the Association are interested not only in mental abnormality, but, also, in the fountain-springs of normal behavior. Their discussions involve consideration not only of the mind, but of the physical being as well, through the mechanism of which the mind makes known most of its operations. The next annual meeting will be held in Richmond, Virginia, about the first of June, 1925, under the presidency of Dr. William A. White of Washington City.

Dr. White is a profound student of the human race; he is interested in every phase of human activity; he is a lecturer to medical students, and to officers of the Army and Navy on diseases of the mind; he is one of the outstanding authorities in this country in matters relating to disorders of the mind, and his thoughts even about the most abstruse mental condition find expression always in language absolutely clear and concise. He never fails to convey to his listener or to his reader his exact meaning. His clarity of thought is the envy of all of his medical acquaintances. The coming meeting in Richmond should be a stimulus to the investigation of mental disorders especially in the South, where it is so much needed.

The Alien Insane.

One of the most interesting problems discussed at the meeting was that of

mental unsoundness in the immigrants admitted to the United States. The paper of Dr. Spencer L. Dawes, of New York, on "Immigration and the Problem of the Alien Insane" initiated the discussion. We who dwell in the South, where we rarely come into contact with a foreigner, can scarcely realize the meaning of insanity and other forms of mental disorder in the almost unbroken stream of foreigners that has been passing into New York City throughout the life of our republic. The insane amongst those new arrivals—the most insane of them, at least,—are stopped in New York City, and they become at once, unless deported, more or less permanent wards of the State of New York as patients in the various state hospitals. Dr. Dawes dwelt upon the inadequate facilities provided by the Federal Government for an adequate investigation of the mentality of the immigrants. He told how he had stood, hour after hour, as a medical inspector of the government beside a marching line of foreigners, with only 4 or 5 seconds at his disposal in which to pass upon any immigrant. A natural consequence was and is that thousands of crazy people find admission annually into the United States. Because of the political influence exerted in behalf of them, either by relatives or by organizations in this country, it is practically impossible to deport any of them. They remain an economic burden upon the taxpayers—principally upon the taxpayers of New York State. Last year that State sold fifty millions of dollars worth of bonds for the purpose of enlarging and improving its state hospitals; a goodly portion of that vast sum will be expended upon people who have no citizenship in the United States. Dr. Dawes advocated preventive procedures against the admission of insane aliens. He would have the mental investigation of prospective immigrants made in the foreign country in which they have residence, so that it would be impossible for them to buy a steamer ticket except upon presentation of a medical certificate declaring them to be mentally sound.

The Negro in the North.

The Negro has gone from the South. Amongst us he has ceased to be the main reliance for manual labor. He has gone into the North. Many Negroes are still in the South—hundreds of thousands of them—but their attitude towards the whites around them has undergone a change so radical that as servants the negroes are no longer possible. They are ceasing to be negroes and they are failing to become whites. They must entertain the hope that in the North they may be able to lay aside their sable robes and to assume the togas of the whites. Is that possible? Time will answer the question. Is the negro an economic necessity in the South? Two generations ago throughout the Southland thousands of white men flew to arms about a political question in which the negro was a large factor. Slavery was not necessary. The South is better off now without the negro slave. It would be better today infinitely better off if a slave had never been in it. The negro is inherently inefficient. He is obliged to be inefficient. The race is in its childhood. It may not be in its adult state for thousands of years. Upon the South has rested the problem of caring for these black children. The South has paid with great dearth for the labor it got from them. So long as the southern agriculturist relies upon the negro to care for his live stock, so long will he have scrub stock; so long as the southern farmer relies upon the negro to operate his farm machinery, so long will farming remain unprofitable for that southern farmer; so long as the day's labor in the South is set by the negro, both in quantity and in quality, just so long will that standard be poor, and just so long will labor in the field be regarded as menial and beneath the dignity of the white man. The disappearance of the negro from the South would see the introduction of thoroughbred, well-kept live stock into the South; it would be followed by scientific farming, by timber conservation, and by the most amazing improvement in the cultivation of the face of the earth. In the far South the

white man can no more work with his hands in the field than he can sit at meat with the negro; manual labor must be done there by the negro. The white man is forbidden by custom from doing it. But the activity of the boll weevil and the emigration of the negro to the North is going to revolutionize far-southern agriculture, and the change is going to be an improvement.

For years and years the industrial regions in the North have depended upon the steady inflow of foreign labor for their manual laborers. There was no place in those fields of activity open to the southern negro. But now all has been changed. Restricted immigration is shutting out the foreigners and his place in the North is tentatively being filled by the negro. Will the negro be able to secure permanent footage there? We shall see. The northern man has little acquaintance with the negro as a laborer. He knows the negro only as a servant. The immigrant often found himself at work in this country even a few days after arrival in a gang of his fellow-countrymen and under a boss of his own nativity who spoke his own language. But the negro will be more of an alien in the fields of industry in many portions of the North and in the West than an Italian or a Slav. One wonders how the negro is going to react to the North's economic interest in him. The interest will be economic, and not otherwise. The southern white man's interest in the negro has been, also, economic, but there has been genuine concern of the superior for the inferior. Many a southern white man has all but impoverished himself in behalf of a wholly hopeless and trifling negro. But the time is rapidly approaching when the negro will be without his white man in Court. His old-time friend, more influential with the Court than the ablest barrister, is passing away with the changing southern civilization. What is going to be the attitude of the North to the presence of the negro in increasing numbers? Is racial intermixture going to become possible on a considerable scale? Is the North going to regard the negro as more desirable than the for-

esigner who is now being excluded because of his undesirable qualities? What is going to be the attitude of organized labor in the North towards the negro industrialist? Is the negro going to find a welcome in the labor unions? Is the southern white taxpayer going to continue to spend cheerfully, as he has done in the past, his money for the education of the negro child as well as for the education of his own child, even though the negro youths continue to go North to live their lives? Everything relating to the negro at this time is followed by multitudinous interrogation points.

Urology

A. J. Crowell, M. D., Dept. Editor

Dr. Claude D. Pickrell in reviewing Doctors J. D. Barney and A. C. Gilbert's paper on "Some Clinical Observations on Cancer of the Prostate," which appeared in the Boston Medical and Surgical Journal, 1924 cxc 19, expresses in such concise form our views and really our experience in handling prostatic obstruction that I am reproducing verbatim his abstract for the journal.

"Of a series of nearly 700 cases of prostatic obstruction 23.9 per cent were malignant. An early diagnosis is therefore imperative. While the outstanding signs, such as a stony hard, nodular, fixed and enlarged prostate with induration of the vesicles, are characteristic of cancer, examination will often disclose a prostate which is very deceiving. It may be small, fairly movable, smooth and very little indurated. Fibrosis may simulate cancer. The perineal operation may completely remove the obstruction. This is not always accomplished by the suprapubic operation.

"In 22.1 per cent of the cases reviewed, symptoms other than urinary symptoms which were caused by early metastases predominated. Bumpus called attention to the fact that carcinoma of the prostate may metastasize early and cause symptoms other than those of obstruction. There may be pain in the suprapubic area, the back, the hips, the thighs, the perineum, the abdomen, or

the chest. In 58 per cent of a series of cases the authors found bone metastases. Therefore the X-ray is indispensable in the diagnosis.

"The treatment depends upon the condition in the particular case. If metastases are not demonstrated complete removal is indicated, and for this the perineal route is best. If metastases are present, a passage is formed. When the bladder is involved, suprapubic drainage is done. Radium may be of service, but it should be used very carefully. Deep X-ray therapy is indicated in all cases.

In conclusion the authors emphasize the following points:

"1. Cases of cancer of the prostate are usually seen at an earlier age than those of adenoma. In the former the urine is clearer, the kidney function is better, and the general condition is very good. In some cases, however, the urinary symptoms may be very slight and the general condition very poor.

"2. X-ray plates of the skeleton should be made as a routine measure.

"3. Less extensive operations are indicated when metastases are present.

"4. Surgery offers more than radium alone, but the two combined are often very helpful. Deep X-ray therapy will often relieve pain and inhibit growth.

"5. Rectal examination should be made in the case of every patient past middle age."

MISCELLANEOUS

The Healthfulness of Old Fashioned Molasses as a Food and as a Laxative.

Since the attention of the world was called to the existence of pellagra in the South, molasses has been under a cloud at least as dark as itself. The stock report of investigators of the every-day diet of victims of this malady was that it consisted "largely of cornbread and molasses;" and so it came to pass that two of our most excellent articles of food were generally condemned and ostracised. In some instances this frenzy went to the extreme of vilifying not

only the crude materials, but their refined distillation products, corn whiskey and rum, as well.

Corn bread has been reinstated in its high place in our dietary, though it is still difficult to dissuade chefs from an attempt to make of it a confection, but molasses has been kept under a suspicion of some kind of inadequacy.

It has remained for a New Yorker, Dr. W. E. Fitch, in his discussion in the Medical Times of June to remind us of the "Healthfulness of Old Fashioned Molasses as a Food and as a Laxative."

His treatment of the subject is entertaining and instructive, going well into the history of cane and its by products; and arrives at the following conclusions:

As a food.

1. Molasses is a healthful, wholesome food.

2. Molasses is a form of highly concentrated, easily digested carbohydrate food.

3. Molasses is a highly nutritious food, rapidly increasing body weight and muscular development.

4. Molasses when burned in the body yields a fuel value of 1290 calories per pound yielding immediate muscular energy.

5. When molasses is a component of the dietary, the ability to perform strenuous work is greatly increased.

6. Molasses, as a component of the dietary tends to lessen fatigue, and prevents nitrogenous waste.

As a laxative.

7. Molasses exerts a pleasing laxative action on the alimentary canal and in proper dosage produces satisfactory evacuations.

8. A pleasant method of administering molasses as a laxative to children is in gingerbread and molasses candy.

9. Specialists in diseases of children and general practitioners in the South strongly recommend molasses as a simple laxative in the milder types of constipation in children.

except two. Interesting papers were read by Drs. E. H. Sloop, R. H. Harding and W. C. Tate.

The following officers were elected for the ensuing year: Dr. E. H. Sloop, president; Dr. W. B. Burleson, secretary.

The meeting adjourned to meet first Monday in October at place to be named by president.

Publications Received

Differential Diagnosis, Vol. II, Third Edition, Richard C. Cabot, M.D. W. B. Saunders Co., Philadelphia and London. Cloth \$9.00 net.

This volume includes analyses of 317 cases ranging in rarity from pregnancy to phantom tumor. The report of the latter condition is of interest for many reasons. Many doctors of international reputation saw this patient and no two agreed in the diagnosis. One "considered it a phantom tumor." This was confirmed by opening the abdomen. Although it is stated that "the patient made an uneventful recovery and left the hospital Nov. 19, 1908"; nothing is said to indicate that she did not carry her fever and her pains with her, nor is there any notation of her history in the subsequent 15 years.

Dr. Cabot is always entertaining and frequently instructive, but sometimes unconvincing.

Diseases of Middle Life. Edited by Frank A. Craig, Associate Director of the Clinical and Sociological Department of the Henry Phipps Institute of the University of Pennsylvania. In two volumes. \$15 net. F. A. Davis Co., Philadelphia.

We have numerous works on diseased conditions in infancy, childhood, adolescence and old age. This is the first extensive treatment of the subject of disease especially prone to attack the race at the period of greatest usefulness. The two volumes are made up of twenty-two original articles by various eminent authorities. Periodic examinations for the early detection of evidence of the impaired functional capacity in any part of the human economy are stressed. It is gratifying to find the word "management" in many places where "treatment" would have been chosen by the average author. This work is well worthy of careful study.

Handbook of Modern Treatment and Medical Formulary, compiled by W. B. Campbell, M.D. Formerly Resident Physician at the Methodist Episcopal Hospital of Philadel-

The Avery County Medical Society held its meeting in Newland, N. C., on June 2nd. All members were present

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phia. Seventh Revised Edition. F. A. Davis Co. \$5.00 net.

This is a conveniently arranged work on the formulary plan with satisfactory table of contents facilitating ready reference.

Cosmetic Surgery. The Correction of Facial Imperfections. Chas. Conrad Miller, M.D., with 140 illustrations. F. A. Davis Co., Philadelphia. \$4.00 net.

A recent number of "The American Mercury," contained a semi-serious attack on the medical profession for its lack of enthusiasm for cosmetic surgery. The reviewer finds much to commend in this article. One is not obliged to go as far as to say, "Beauty is Truth, Truth Beauty," in order to acknowledge the fact that physical charms are not to be despised, and when possessed should be preserved as long as possible. A competent cosmetic surgeon is a public benefactor not to be confused with the barber shop or department store "beauty doctor." Dr. Miller has earnestly addressed his efforts to this subject for twenty years or more. His teaching is well worth while.

Maternity Nursing in Nutshell, by Elizabeth H. Wickham, R. N., former Supervisor of the Maternity Department, Lebanon Hospital, New York City. F. A. Davis Co.

An important subject is well discussed in a small compass and in plain understandable terms by a nurse who has done much eminent-

ly successful work in this special field.

The Relative Position of Rest of the Eyes and the Prolonged Occlusion Test, by F. W. Marlow, M.D., M. R. C. S. Eng. F. A. C. S., Professor of Ophthalmology in the College of Medicine, Syracuse University. F. A. Davis Co. \$2.50 net.

This special feature of a strict specialty is fully discussed with tabulation and analysis of many illustrative cases.

Cancer of the Breast with a study of two hundred and fifty cases in private practice, by L. Duncan Buckley, A.M., M.D., Senior physician to the New York Skin and Cancer Hospital, consulting physician to the New York Hospital, late member of the American Association for Cancer Research. Member of the American Association for the Study and Cure of Cancer. F. A. Davis Co. \$3.50 net.

It is confessed that almost nothing has been accomplished in effecting a cure of cancer. The author thinks the fundamental error lies in regarded it as a local disease; whereas it should be regarded as the local expression of a general condition, a carcinosis. "The author feels that one should read and study every word within these pages, and begs that no criticism will be made until everything is fully comprehended." The importance of the subject and the novelty of the approach warrant this.

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No. 7

RHUS POISONING AND TANNIC ACID AS A TREATMENT.

By Dr. L. J. Smith, Wilson, N. C.

Any physician who has treated a case of rhus poisoning (ivy poisoning) must have realized the uncertainty of the many therapeutic remedies suggested in our text books on this subject. When you see so many different remedies for a certain disease, you may rest assured that none of them are specific. However, it is my purpose to add another remedy to the already long list, but with the feeling that once you use it, you will discard all other remedies and become convinced, as I have been, that this is a specific for rhus poisoning.

The story of this discovery is as follows: The credit for the real discovery is due Dr. G. A. Foster of Liberty, N. C. Once while he was attempting to treat a case of rhus poisoning for a barefoot boy, an old tanner appeared at his office, and as is the custom with certain laymen, he advised the patient to appear at his tannery and he would cure him. The doctor paid little attention to this, but the boy did, and in a few days the doctor met the boy on the road and asked how he was getting on. The boy replied that he was then cured. Whereupon he told the doctor of the virtue of placing his hands and feet in a tan vat for a few minutes. This put the doctor to thinking and as a result of that thinking, he arrived at this conclusion: If oak tan bark, which contains tannin, cures rhus poisoning, then tannic acid would do the same thing. For several years he used this remedy, always with good results. My connection with this discovery was a patient under treatment by Dr. Foster, and to use the phrase of testimonial writers for patent medicine:

"I was cured with only two applications." Since that time I have used tannic acid in my practice for the cure of rhus poisoning, and have yet to see it fail to cure.

A saturated watery solution of tannic acid applied to the affected parts two or three times a day is the method used. Some physicians tell me that they add carbolic acid to this prescription and get good results.

For ten years I have been making an effort to find out the physiological action of tannic acid in the treatment of rhus poisoning, but so far have failed to be enlightened on the subject. It is my desire to see this simple remedy taken from the field of empiricism and placed on a higher plane of scientific medicine. Before doing this we must know the chemical nature of rhus poisoning (poison ivy and poison sumach). In 1912 and 1913 there appeared a series of scientific articles in the American Medical Journal by some one in California, who isolated a substance from poison ivy and poison sumach which was alkaloidal in character. I do not know if there has been any more recent work done on this subject. Anyway this gives us a basis for a scientific theory. We know that tannic acid is a chemical antidote for nearly all alkaloidal poisons. If that substance causing rhus poisoning is an alkaloid, then we have a scientific reason for using tannic acid in the treatment. It is well known that tannic acid has strong astringent properties and we might say that it depends on these properties for its physiological action, but other drugs with strong astringent action have been used in the treatment of rhus poisoning without beneficial results, hence we must conclude that tannic acid depends, for its good results, on its powers as a chemical antidote.

Read before Section on Chemistry, Materia Medica and Therapeutics at Asheville, N. C.

My purpose in writing this paper is two fold: First, to call attention to a simple and efficient treatment for a dis-

ease which heretofore had no satisfactory treatment. Second, to stimulate discussion to place this treatment on a scientific basis.

MY BROTHER'S KEEPER. GUARDIANSHIP OF THE PATIENT IN CHRONIC AND SECONDARY UROLOGICAL INFECTIONS.

By Thomas V. Williamson, M.D., Norfolk, Va.,
Staff Urologist to Protestant Hospital.
and Consulting Urologist U. S. Veteran's
Bureau.

It may be aptly said that an individual who harbors a deep-seated, long continued chronic or secondary infection within the urethra, prostate or seminal vesicles, is only half a man. He may be less than half a man. He may be a total social and economic loss to the community. He may even be a burden to the community.

We see and read about cases of chronic prostatitis and vesiculitis manifesting nervous symptoms which may range from slight intolerance toward professional and business discipline to active suicidal impulse; of cases, without number, which, in the attempt to secure surcease from prostatic and vesicular pain become drunkards and drug addicts; of cases which, in seeking to relieve the inordinate and unnatural sexual urge fostered by inflammatory irritation within the urethral adnexa, become morally degraded libertines; of cases in which this same clinical entity destroys the procreative function; of cases in whom pathology is created which may embrace extensive, intractable stricture formation, devitalizing prostatic and vesicular sclerosis and fibrosis, and derangement of the kidney function due to back pressure and ascending infection—some of which may result in death—; of cases in which apparently sleeping and innocuous infections have been transmitted to innocent mates with devastating consequences.

Chronic or secondary infections, then, may run the gamut of symptomatic ills from the slight, seemingly inconsequent signs of the milder catarrhal type to the distressing manifestations of the severer, more advanced and active forms. As his brother's keeper, the practitioner can sermonize with no better text than guardianship against them. He may, with profit to himself and his fellowman, be letter perfect in his text for the simple reason that upon him—and upon him alone—devolves the function of preventing and relieving them. Our patients are densely ignorant about them and, naturally, look to the profession for guidance.

I have purposely coupled the terms "chronic or secondary infection" for the reason that it is quite difficult to separate them in the subject matter of the article under construction. The term chronic is intended to apply more especially to gonorrheal infections while the term secondary may or may not be associated with this type of disease.

In health, the urethra harbors an infinite variety of bacterial flora which is not pyogenic unless an avenue of entrance is created for it. The activity of the gonococcus, trauma or chemical erosion may cause a solution of mucosal continuity through which the urethral parasites enter and become pyogenic. The prostate and vesicles may be the seat of secondary infections by direct extension of inflammation or transmigration of bacteria from surrounding structures. The urethra and adnexa may receive an infection by way of the blood and lymph streams from distant foci in the teeth or tonsils.

We should not be too condemnatory of the gonococcus as the primary factor in secondary infections hereabout. Experience gained in the influenza epidemic is too fresh in our minds to permit this. We saw any number of prostatic and vesicular involvements then in which there had been no previous Neisserian history. Some of these inflammations were very acute and caused quite extensive pathology such as induration, sclerosis and permanent fibrosis. The author does not recall a case of pyelitis or

pyelonephritis in recent years in which the prostate has not been to a greater or less extent diseased. Since foci of infection in the tonsils or teeth may be responsible for kidney manifestations (proved by the prompt response to lavage of the renal pelves after removal of the focus in the teeth or tonsil, while there had been no betterment in the kidney condition by the same treatment before) we assume, as has been said before, that the prostate and vesicle fall heir to the tribulations of the teeth and tonsils. From this, we see that we are not dependent upon the gonococcus for secondary infections.

We appreciate, of course, that this pathogerm is the primal or contributing factor to the majority of secondary infections. Most men have, at one time or another, suffered a gonorrhea. About 75 per cent of this number develop a prostatitis, while a large proportion are seized with a vesiculitis also. The prostate is relatively the more frequent site of gonorrheal invasion than the vesicles. This is true because the prostate has to contend against infection through gravity of the pus which bathes the floor of the posterior urethra no less than against direct extension of the inflammation through the openings of the multiple ducts situated there. There are but two points of entry to the vesicles. One on each side, they are located high up on the verumontanum. Therefore, while the chances of the vesicles to escape involvement when the posterior urethra is the seat of an acute gonorrhea are not exceptionally good, they are appreciably better than those of the prostate. In fact it is an amazing and felicitous occurrence if the prostate ever escaped under these conditions; and the percentage of vesicular contamination is far higher than the casual student of the disease would suspect.

As the acute stage of a gonorrhea passes away, other organisms than the gonococcus become associated in the morphology. Experience teaches us that these secondary bacteria may and do, in most instances, outlive the gonococcus. There is no sharp dividing line between the cessation of Neiserian mor-

bidity and the inception of the secondary process. The one gradually merges into the other.

There are some physicians who believe that urethral gonorrhea is never cured. I do not subscribe to the teaching of this pessimistic school. It is incompatible with reason and contrary to experience. I have encountered individuals in whom a gonorrhea has persisted for a long time—individuals who have arrived at that mental stage where they feel that the disease, in them, is incurable. Yet I have never seen a patient who made the necessary sacrifice of time, patience and regularity to treatment who was not, in the end, cured in so far as we judge a cure by clinical and laboratory manifestations. I do believe, however, that the after effects of gonorrhea, if neglected, may persist until death, and that, even with the best of management and treatment, a urethra, prostate or vesicle which has once been the seat of an infection, will always remain an easy prey to any secondary invasion coming either directly or carried from distant foci.

As long as there are clinical signs of disease following a gonorrhea, like shreds in the urine or pus in the prostate, the condition is potentially infectious and treatment is indicated until there is a cessation of all clinical pathology. Treatment should be continued until the patient is clinically clean for two reasons. (a) Only by so doing can we eliminate the gonococcus with any degree of certainty. We feel justified in pronouncing a cure, only, when the clinical signs of the disease are gone and the patient remains free from recurrence symptoms for six months or a year. It is in those patients who, for one reason or another are not rid of clinical signs that we find an indefinite persistence of the gonococcus. In some, this fortunate result is the fault of heedlessness and neglect on the part of the patient while, in others, the blame may be placed upon negligent management of the case. Very pertinently, Tribble says (1)

I wonder if in our haste to affect a cure, we take into consideration enough

the patient himself, and if, as a rule, we are as frank with him as we would expect others to be to us, in similar circumstances. I think that most of us err at this time and are too ready to assure our patient that he is well and will never again have any trouble from that part of his body. That this is so, is evidenced by the large number who of their own volition show up again for treatment, sometimes coming back to those who had their cases originally, but oftener trying a change in the hopes of betterment, the facts being, that these individuals realize, without being exactly able to say why, that something is wrong. Some of these individuals are suffering from a phobia it is certain, but the vast majority are not."

(b) Unless the patient is clinically cured, he has no assurance against the inception or continuance of a secondary infection. These pathologic sequelae are much more serious than a casual view would indicate. While they are not transmitted to others, they provoke grave, lasting and damaging changes in the genito-urinary mechanism. For the future comfort and well being of the patient, they should be considered no less urgent than the primary, contributing cause. In earlier life we find that they beget neuroses, inhibit the procreative function, cause pain, create intractable pathology and general undermine the physical and moral stamina.

We should not confuse interstitial or parenchymatous prostatitis with senile adenomatous or fibrous hypertrophic change in the prostate; but, we have no assurance whatever, that a long continued inflammatory irritation within and around this organ may not incite a greater and more certain degree of fibrous or adenomatous growth in the late years of life. If there is any foundation to the theory of irritation as an inciting cause of malignancy, then there is a fertile field for it around the prostate. Routine section of adenomatous prostates show a much greater percentage of malignant degeneration than was at one time, suspected. Speaking of the causes of prostatic hypertrophy, Deaver says (2) "Even if the inflama-

tion of the deep urethra and prostate have not been of gonorrheal origin, the repeated attacks of congestion and catarrhal exudation, from whatever cause, which frequently occur in this part of the human frame, are quite sufficient cause in the majority of cases."

Inflammatory prostatitis or vesiculitis, in the aged, is neither pleasant to contemplate nor easy to treat. These entities may unquestionably be the sequelae of early, uncorrected disorders in these structures. Thus we see that from the days of youth on into old age, chronic or secondary urological infections are a menace to the patient and should challenge an unremitting, tireless professional guardianship to prevent them.

From the standpoint of our guardianship, the first and greatest element of responsibility is of an educational nature. The laity is densely ignorant concerning these conditions. We are then the torch bearers who carry the light by which they may see these perils clearly and intelligently. The profession has long since disabused its mind from the totally erroneous impression that a gonorrhea is no worse than a bad cold, or that a slight catarrhal discharge may be dismissed as of no importance. Medical men, if they are properly alert, regard these maladies as major problems of practice. The patient should be converted to the same belief. His infection ranks equally in gravity with tuberculosis and syphilis.

There has been quite a change in the attitude of the laity in relation to tuberculosis and syphilis in the past decade, directly attributable to an educational campaign which has taught the public the truth regarding these diseases. A similar course of instruction to dispel the fog of ignorance which envelops the lay mind relative to chronic and secondary urological infections is no less imperative.

The patient should not be left with a shadow of doubt as to the prognosis in his case. A gonorrhea may respond to treatment in a day, a week, a month or a year. We do not know, at the beginning, which it will be. Chronic or secondary infections may require several

years for a clinical cure. In tabulating one hundred personal cases of these chronic infections, Paul found that it took between five and forty-nine weeks to effect a cure. (3). Guiteras says (4) "The treatment of chronic prostatitis is most trying and unsatisfactory as far as progress is concerned. I make it a rule never to say definitely to the patient the length of time that will be required to effect a cure. It is advisable never to predict a cure in less than six months and add that it may take much longer." The words of this great master of urology express the thoughts of us all. The patient should be taught to understand this also.

It is difficult to induce a man, uninitiated into the mysteries of medicine, to believe that a diseased tooth, tonsil or appendix may cause urinary trouble. This seems utterly preposterous to him. It is no easy task to convince him that it may take a year to cure a chronic prostatitis. Yet these things are so and we cannot instruct him in a better adage relating to his affliction, than that inscribed above the entrance of the Academic Building at the University of Virginia. "Know ye the truth and the truth shall set you free."

In treating these recalcitrant, stubborn conditions, we have learned that infinite patience and attention to detail will generally enable us to effect a cure. We have also learned that we cannot expect satisfactory results unless we ascertain and eliminate the active or contributing cause of the disease i. e. foci in the prostate, seminal vesicles, Cowper's gland, kidneys, tonsils, teeth, etc.

Paul (3) very concisely expresses the sentiment of his fellow urologists, it matters not if they are affiliated with the optimistic or pessimistic gonorrheal school, when he summarizes as follows: "In the vast majority of cases, these infections (chronic or secondary) may be totally eradicated by appropriate treatment, irrespective of the length of time elapsed since the original infection" (2).

The lesson we learn regarding chronic or secondary infections is that they are not incurable. To be able to cure them, each separate one must be regarded as a

distinct major problem. That each is a major problem cannot be denied. We cannot properly fulfill our guardianship until we admit this fact to ourselves.

References.

(1) Tribble, John M., Prostatitis: A Urological Problem. *The Urologic and Cutaneous Review*, p. 147, March, 1924.

(2) Deaver, John B., Enlargement of the Prostate, Its Diagnosis and Treatment, p. 90.

(3) Paul, H. Earnest, *Journal of Urology*, p. 125, February, 1922. "Chronic Infection of the Male Urethra and Its Adnexa."

(4) Guiteras, Raymond, *Urology*, Vol. II, p. 209.

Suite 501-507 Flat Iron Building.

CONSERVATION IN OVARIAN SURGERY WITH REPORT OF 100 CASES.*

By Robert T. Ferguson, M.D., F.A.C.S.,
Charlotte, N. C.

When Ephraim McDowell did his first ovariectomy in the year 1809, in the pre-Listerian era, he blazed the trail and marked the first milestone in ovarian surgery; and if the legend be correct, that outside of the door where the operation was performed stood a guard of friends, neighbors and relatives who would attend to Ephraim in case the operation was unsuccessful, than that same weapon, in use to-day, might be the means of saving many an ovary that is otherwise sacrificed by inexperienced hands. You have seen, and I have seen, you have removed, and I have removed, ovaries that should not have been removed and done complete oophorectomies where partial resections would have been the operation of wisdom. Dr. W. J. Mayo made a very sage remark before the recent meeting of the American College of Surgeons in Chicago—

*Read before the Medical Society of the State of North Carolina at Raleigh, N. C., April 15-17, 1924.

go to the effect that the day for "green-horns" or inexperienced men operating had passed, and with the opportunities open to the men in the big hospitals of the country for internships where they could learn to do surgery there was no excuse for inexperienced men operating. There was a time not so long ago when doctors learned to do surgery on their private patients by plunging, cutting, tying, removing, sewing, sweating and swearing, and the patient lived by the mercies of God and not by the skill of the surgeon. To-day a man to do surgery must prepare himself in advance for malpractice suits fostered by shyster lawyers are too frequent. I wish to go on record as saying that conservative ovarian surgery is the greatest God-send to woman-kind since Ephriam McDowell first demonstrated the fact that ovariectomy could be successfully performed. How many women have been subjected to a premature menopause, with its chain of distressing mental symptoms by a double oophorectomy when a partial oophorectomy would have been 100 per cent better, and all that was necessary. Can you imagine a more pitiful case than a woman who has been told that she would be cured by removal of her ovaries and have her come to the realization of the fact a short time afterwards that the post-operative state was worse than the pre-operative; that where she formerly had a mild occipital headache she now has a frontal, parietal and occipital; that where she formerly slept most of the night she now suffers from chronic insomnia; that where she once had an occasional backache she now has a continuous backache and hot and cold flushes that send her from the torrid waves of the equator to the chilly blasts of the arctic regions; that where she could once attend to all her household duties in partial comfort now she is in the throes of misery and she lives on and on damning you for a condition for which you are entitled to just damnation? What is better, to remove a follicular cystic ovary which is only slightly enlarged and slightly damaged, and gives a minimum of symptoms, or

tell the patient the real truth and let her drift along for a few years to her menopause, even though she is uncomfortable at times? Why not do a partial resection in these cases, when the condition justifies, and if necessity demands it later than do the complete operation when the ovaries are functionally inactive. Of course we have to make a differential diagnosis between a small cystic ovary that is giving a maximum amount of trouble and that requires removal for cure and one that does not, just as the throat specialist has to differentiate between the small tonsil that looks comparatively healthy and one that is the seat of trouble.

The ovary is one of the most important and complex organs that goes to make up the female anatomy, therefore it is very important to understand the anatomy, embryology, histology and physiology of the ovary in the minutest detail in order to deal with it intelligently from a surgical standpoint. You should also form an intimate acquaintance with the nerve supply which comes from the renal and spermatic ganglia. The fact that the ovary derives its blood supply directly from the abdominal aorta, via the ovarian artery, at once places it amongst the most important organs in the abdominal cavity, otherwise it might obtain its blood supply from some branch or anastomosis from some other pelvic organ. Of course we know that it does have an anastomosis with the uterine after it has given branches to the ovary.

Now we come to the fountain-head of energy in the ovary, the graafian follicle, which is composed of highly specialized cells which have the power of growth under proper conditions and to move to the surface of the ovary where rupture occurs during the process of ovulation and with continuation of development of the ovum when it meets the spermatozoon in the tube and becomes fertilized, later passing into the uterus where the endometrium has been prepared for its reception, probably by the action of the secretion of the retained cells or the newly formed lutein cells of the ruptured follicle which later go

to form the corpus luteum. We know that the corpus luteum possesses several functions: it inhibits ovulation, it produces a substance which causes growth in the uterus, and we also know that removal of the ovary containing the corpus luteum of pregnancy, or particularly bi-lateral oophorectomy early in pregnancy, almost invariably results in abortion. Knowing these things we should be stimulated to greater activity in our methods of determining what is best to be done in every case of ovarian disease and not run the risk of producing a premature menopause with its chain of undesirable symptoms until we are fully satisfied that there is no alternative. After the graafian follicle with its contained ovum I believe the corpus luteum is the most important single element in the ovarian make-up, and that it has a great many controlling functions in the pelvis, and other parts of the body, that are yet occult. These latter I believe hold the controlling influence over menstruation and other forms of uterine hemorrhage. Gustav Born was the first to suggest the corpus luteum as an organ of internal secretion, and we are indebted to Fraenkel, Wallart, Leo Loeb and others for much experimental work demonstrating the physiologic function of the corpus luteum.

Endocrinology is just now in its infancy and we may expect to see astonishing results from the investigations being conducted, and when Crile's electric theory is developed to the point where the average mind can float through its fathomless depths we may expect to see a wonderful transformation in the treatment of pelvic disorders as well as in other conditions.

I wish to report a series of one hundred comparatively recent oophorectomies which were done primarily either for relief of ovarian symptoms or in connection with other operations in the pelvis in which it was necessary to remove the ovaries also:

Cystic ovaries (simple or follicular)-----	28
Cystic ovaries (twisted pedicle)-----	2
Fibroid ovaries -----	2
Ovarian abscess -----	2
In pus tubes where the ovaries were in-	

separable from the mass-----	36
Dermoid cyst -----	1
Cystic ovary in connection with rupture extrauterine pregnancy -----	2
Cystic ovary found in operation for phan- tom tumor -----	1
Ovaries removed in operation of hyster- ectomy for cancer of cervix-----	4
Ovaries removed in hysterectomy for uter- ine fibroids -----	20
Ovaries removed in hysterectomy for me- norrhagia and hypertrophied uterus following the menopause -----	1
Ovaries removed in hysterectomy for ex- trauterine pregnancy at full term-----	1

100

In this series there were two deaths, one from suppression of urine in a case of double pus tubes where the ovaries were included in the abscess mass and had to be removed in a patient that was a very bad surgical risk; and the other in an advanced case of carcinoma of the cervix complicated by gall stones. This series gives a fair idea of the conditions which necessitate oophorectomy, some of which leave no choice in the method of operation, and others where considerable judgment is requisite.

Transplantation of the gonads is occupying the attention of the profession and the minds of the laity to a marked degree at the present time, and I am convinced that ovarian transplantation should be accomplished in suitable cases in the future. On a recent visit to Chicago I was very much impressed with the work being done in experimental gland transplantation by Dr. Lespinasse. Then the question is, what shall we do with the diseased ovary today? I am fully persuaded that many ovaries have been sacrificed that should not have been; that many of us have in the past caused misery where we should have at least caused amelioration of symptoms, if not cure; and I am sure that in eighteen years of operative experience in the pelvis I have learned to be conservative when I undertake to change the syndrome caused by ovarian pathology.

RECENT ADVANCES IN THE THERAPY OF SYPHILIS.

By Warren T. Vaughan, M.D., Richmond, Va.

While the treatment of syphilitic infection has become thoroughly standardized, few will admit that in its present form it is completely satisfactory, even in the majority of cases. Syphilitic invasion of certain tissues, such as the central nervous system, offers special problems which are unusually difficult of solution. Many therapeutic improvements have been tried and discarded, and many more will without doubt suffer the same fate. Within the past few years, however, considerable work of value has been reported and some of the methods are becoming accepted as of permanent value in syphilis. For this reason it is worth our while to review those recent contributions which are of particular promise.

When salvarsan was introduced into the medical world, the details of its administration had been already worked out. Ehrlich, after having chemically perfected the spirocheticide, had had its action tested on thousands of individuals in several of the best German clinics, so that when the treatment came into general use the experimental phase had been passed, and the dosage and manner of administration had already been worked out in detail. In this way unfortunate accidents in the hands of inexperienced physicians were to a great extent avoided.

Nevertheless there have been several important and valuable changes in the method of arsphenamine therapy during the last ten years. In the treatment of syphilis, it was soon discovered that the "therapia sterilisans magna," which had been satisfactorily employed in animals could not be reproduced in man. Our inability to destroy all of the spirochetes in the body with one massive intravenous medication has rendered it necessary to administer repeated doses. The question of dosage in the treatment

of syphilis has therefore become extremely important.

Ehrlich in his original work on trypanosomes, recognized that in those cases not entirely cured by the first treatment, relapses were even more difficult to cure, treatment which had been unsuccessful in a first attempt was usually unsuccessful on repetition. Repeating treatments, none of which cured entirely, were often found to have progressively less influence on the activity of the infecting parasite. A condition of "Festigkeit", increased tolerance or resistance to the action of the drug had been produced.

The possible development of "drug-fastness" by the infecting agent in individuals undergoing antisiphilitic treatment, is now recognized as an important feature and a phenomenon to be avoided if possible.

A contribution of considerable significance has been made by Bronfenbrenner and Schlesinger, who found that minute doses of arsphenamine, instead of inhabiting the progress of the spirochetal infection, actually caused the disease to progress more rapidly and more extensively in the animals so treated than in other animals similarly infected but not treated at all. Bronfenbrenner and Noguchi found some time ago that, minute amounts of arsphenamine present in culture media stimulated the growth of spirochetes. Very minute quantities of arsphenamine appear therefore to be of less value than no treatment at all. The phenomenon appears analogous to that found in the treatment of cancer by the roentgen ray, where small doses stimulate the cells to proliferation while larger doses destroy. Bronfenbrenner and Schlesinger point out that this stimulative action of minute doses of arsenical compounds is not to be confused with the development of increased tolerance, but is characterized by an actual increase in the rapidity of multiplication of the parasites.

The dosage used by these investigators is of course extremely small and it does not follow from their report that the occasional small doses used

therapeutically in the treatment of syphilis have a stimulating action. It is quite probable that even these small doses are sufficiently large that they inhibit multiplication. This is indicated by the customary diminution in the intensity of the positive Wassermann reaction.

Brown and Pearce have shown that insufficient treatment with arsphenamine or neoarsphenamine may alter the immunologic status in experimental animals to such an extent as to favor the development of a second or super-imposed infection without a cure having been accomplished for the first. They inoculated rabbits, and after the development of the primary lesion, treated the animals with single massive doses of arsphenamine or neoarsphenamine. The primary lesions as a rule retrogressed and in some instances disappeared. Reinoculation, at a time when the drug was no longer present in the body in sufficient amounts to produce an effect, and when the original primary lesion had practically disappeared, produced in most of the rabbits a second primary at the site on reinoculation. In the majority of the animals the original infection had not been entirely destroyed and as the original parasites once again commenced to multiply, chancres developed both at the site of the original inoculation and the site of reinoculation.

It has long been held that individuals once infected with the spirochete of syphilis are immune to reinfection as long as the germ remains active in the body. Reinfection usually is assumed to be evidence that the patient had been cured of the former infection. The work of Brown and Pearce shows quite conclusively that experimentally at least, an individual may become reinfected with syphilis even though the original invaders are still living in his tissues. Similar phenomena have occasionally been reported in man.

How frequently the factors discussed above will become of importance in the treatment of syphilis is uncertain. Certainly the standard doses in use in the large clinics have proved their

worth. But that they are the ideal dosage does not follow. There is a tendency with many to give relatively smaller doses of arsphenamine or neoarsphenamine than formerly. Past experience and recent laboratory observations appear to be of accord in indicating that the dosage in antisiphilitic treatment should be as high as safety permits.

The standard intravenous dose of arsphenamine is 0.6 gm., that of neoarsphenamine 0.9 gm. These quantities appear to be sufficiently large for satisfactory therapeutic results and yet are not so large that they cause untoward results. They contain about equal amounts of arsenic and are supposed to have equal therapeutic value. The majority of critical observers have found, however, that there is a difference in the effectiveness of the two drugs when given in these doses. Most syphilologists have concluded that arsphenamine produces prompter results and is less liable to be followed by relapse. The popularity of the second preparation is due to the greater ease of administration, a factor which should play a less important role than it actually does. In nearly all of the armies, during the war, syphilis was treated with neoarsphenamine. This was undoubtedly due to the greater ease, and shorter time required for administration, thereby facilitating the treatment of larger numbers of individuals, and to the fact that considerably less apparatus was required. Rightly or wrongly this has given an official sanction to the use of neoarsphenamine.

Considerable experimental work has been done within recent years to determine if possible the comparative value of the two drugs. Schamberg, Kolmer and Raiziss, working with trypanosomes, found that the trypanocidal activity of arsphenamine was 1.74 times that of neoarsphenamine. Castelli and others, working on trypanosomiasis, spirillosis and rabbit syphilis reached similar conclusions, finding that the activity of the former was between 1.5 and 1.78 times that of the latter. If we are to accept these results we should

conclude that therapeutically 0.6 gm., of arsphenamine is not equivalent to 0.9 gm., of neoarsphenamine, but rather 1.05 gm. The therapeutic activity of 1.05 gm. of neoarsphenamine is equivalent to that of 0.6 gm., of arsphenamine.

The trypanocidal dose of arsphenamine (dosis therapeutica) is 4.564 times less than the highest tolerated dose, (dosis tolerata). On the other hand, the therapeutic dose of neoarsphenamine is 6.35 times smaller than the highest tolerated dose. The latter is therefore, a safer drug, the margin of safety between the two doses being distinctly greater. This is true even if 1.05 gm., instead of 0.9 gm., of neoarsphenamine should be used.

The average minimum effective dose for arsphenamine is 3.1 gm., per kilo body weight; for neoarsphenamine, 3.4. These two doses are approximately the same. The minimum lethal dose on the contrary is 53.2 for arsphenamine and 96.5 for neoarsphenamine. Once again we see a wider margin of safety in the latter drug. Voegtlin and Smith designate as the "therapeutic ratio," the ratio M. L. D./M. E. D. For arsphenamine this is 17.2, and for neoarsphenamine 28.4. The higher the ratio the less danger is there in administering the drug in amounts greater than the M. E. D.

These experimental observations coincide with clinical knowledge that toxic reactions occur less frequently after large dose of neoarsphenamine than after corresponding doses of arsphenamine.

Schamberg, Kolmer and Raiziss have made a study of the relative toxicity of the two drugs. They found that for rats and mice neoarsphenamine is about 2.4 times less toxic than is arsphenamine. They conclude that, as far as is indicated by intravenous experiments on rats, the usual dose of 0.6 gm., of arsphenamine is about 12 times less than the highest tolerated dose, while 0.9 gm., of neoarsphenamine is 19 times less than the highest tolerated dose for the latter drug. Here again the conclusion is that larger amounts of neoarsphenamine

are of less danger than are proportionate amounts of arsphenamine.

It is well known that neoarsphenamine may be given with safety at shorter intervals than arsphenamine. Will it not be true then, that if the former drug is administered in slightly larger doses and somewhat more frequently, say 0.9 gm., thrice weekly, equally good therapeutic results will be obtained? This raises a question as to whether the difference in therapeutic results is due merely to a difference in dosage or whether it depends on a chemical difference between the two drugs.

Schamberg concluded from comparative studies that the addition of the formaldehyde sulphaxylate group found in the neoarsphenamine may lessen the affinity of this drug for the protoplasm of the parasite, but at the same time lessening the affinity for the body proteins to an even greater extent. This hypothesis would explain both the diminished therapeutic effect and also the decidedly lessened toxicity. Another phenomenon bearing on relative toxicity is the observation by Schamberg that arsphenamine in practically all concentrations hemolyzes red blood cells in vitro, while neoarsphenamine does not do so any concentration clinically employed. Schamberg has concluded that arsphenamine is more active therapeutically but that this advantage is balanced by the much higher tolerated dosage of neoarsphenamine and by the fact that the latter is less likely to cause biochemical disturbance in the blood and the tissues.

The preceding review indicates fairly clearly the unsettled status of arsphenamine and neoarsphenamine dosage. At present there is sufficient evidence to justify those who prefer to use the simpler technic of neoarsphenamine therapy, but only the condition that sufficiently large and frequent doses be administered.

The use of bismuth in the treatment of syphilis was developed in France chiefly through the efforts of Sazerac and Levaditi, who recognized the value of the earlier uncompleted work of

Sauton and Robert of the Pasteur Institute. The preliminary observations made by Sauton and Robert were published in *Annales de L'Institute Pasteur* in 1912. No further experimental work was performed until after the war when in 1921, Sazerac and Levaditi published their preliminary observations.

Fournier and Guenot have collaborated with Sazerac and Levaditi in the clinical use of bismuth salts. They give the drug intramuscularly in a 10 per cent suspension in Olive oil and emphasize the importance of depositing it into the muscles rather than subcutaneously. The latter method is decidedly more painful while the inconvenience from intramuscular injection is no greater than that observed after intramuscular mercury. A total of two or three grams of bismuth should be given during the first month of treatment. Two or three injections of 0.2 grams are given daily, after which the patient receives 0.3 grams twice weekly throughout the month. After this period, treatment may be continued with weekly injections of 0.2 and 0.3 grams or the patient may be allowed one month rest, after which the regular course is repeated. The only necessary precaution for the patient to observe is a careful hygiene of the mouth.

Under this treatment spirochetes disappear from the primary sore after the first to the third injection. The chancre becomes completely healed within five to twenty-five days, usually within two weeks. The Wassermann reaction, if negative at the initiation of treatment, usually remains so. If positive, the strength of the reaction falls as satisfactorily or perhaps more so than after the use of arsphenamine.

Bismuth is particularly useful in the contagious stages according to the authors, causes more rapid and complete disappearance of the contagious lesions than does arsphenamine. In secondary syphilis the cutaneous lesions disappear as a rule within a week. The strength of the Wassermann reaction is very favorably influenced, becoming practically negative within two or three

months as a rule, but varying considerably as with other forms of treatment. Tertiary lesions improve with almost equal rapidity. This is particularly true of gummata and tertiary skin and mucous membrane manifestations. The authors report no conclusive observations on visceral or nervous syphilis.

No untoward effects from the use of bismuth have been reported other than a tendency toward stomatitis similar to but usually not as severe as that following the use of mercury. A marginal pigmentation usually appears in the gums, analogous to the familiar lead line. The stomatitis is usually a fusospirillary infection similar to that of Vincent's angina. It is satisfactorily treated by the methods customarily employed in Vincent's angina and may even be rapidly cured by the local application of the tartrobismuthate in powder form. Bismuth appears in the saliva but in an altered form, probably combined with sulphur, in which it has lost its spirillicidal properties.

The immediate results from the injection of bismuth compounds in syphilis appear from the published reports to be as good as or better than those obtained with mercury and arsenic compounds. In any case, the drug will be valuable for alternate use with the latter, in those cases where the infecting parasite has apparently acquired a degree of tolerance to the drug. It will be several years before the end results from bismuth treatment can be comprehensively tabulated. In fact it has not been until recently that we have come to realize the significance of the late unsatisfactory accidents from standard treatment with mercury and arsphenamine.

There is some diversity of opinion as to what therapeutic procedure may best be followed in obvious nervous system infection. In general, three views are held. First, that intravenous medication alone produces satisfactory results; second, that intravenous medication should be combined with spinal drainage; and third, that the administration of salvarsanized serum intraspinally produces the greatest benefit.

The performance of spinal fluid drainage after intravenous treatment was originally based on the assumption that with reduced intraspinal pressure, the arsphenamine circulating in the blood will diffuse more readily into the subarachnoid space. Dercum claims better results than by the Swift-Ellis method, due he thinks, to the more thorough drainage. Every possible drop of fluid is removed each time. Theoretically, the rapid removal of fluid will produce a relative hyperemia of the cord and brain with resulting improved nutrition to the parts. Dercum draws an analogy to the Bier method of hyperemia as used in surgery. If his theory is true, drainage alone irrespective of intravenous treatment might improve the nutrition of the central nervous system with resultant spontaneous improvement.

The presence of arsphenamine in the spinal fluid according to Dercum, is of no significance and probably plays no part in the good results obtained. The difficulty in syphilitic medication lies not in the failure of passage of the spirocheticide through the choroid plexus into the subarachnoid space, but in its failure to pass through the walls of the capillaries situated in the nervous tissue, into the parenchymal cells where the chief damage takes place. The hyperemia resulting from spinal drainage would increase any such tendency to pass through the capillary walls.

Fordyce, who is an ardent advocate of the Swift-Ellis method, takes vigorous exception to Dercum's conclusions. He points out that Swift and Ellis did not develop their method under the mistaken idea that the nervous system received its nutrition from the spinal fluid, but rather because intraspinal therapy had been successfully employed in the treatment of cerebrospinal meningitis. Many forms of neurosyphilis have their site in the meninges and are limited to these structures. Meningovascularitis cannot always be differentiated clinically from paresis and in most cases of true paresis there exists at the same time a meningitis. Positive spinal

fluid findings are due usually to meningeal involvement and this can best be treated by the direct application of a spirocheticide. The more pronounced the leucitic meningitis, the more marked will be the benefit derived from intraspinal medication. Fordyce states that numerous cases have been entirely cured and many greatly benefited by Swift-Ellis treatment after the failure of those methods so strongly advocated by Dercum and others. Numerous cases of progressing optic atrophy have been permanently arrested by intraspinal medication after the failure of prolonged intravenous treatment.

The prevention of late neurologic accidents of syphilis does not depend solely upon a recognition of early invasion. The theory that inadequate treatment predisposes to late nervous involvement has been discussed in some detail by Keidel. Little is known with regard to immunity in syphilis but we have considerable indirect evidence that the human body does develop some degree of immunity against the *treponema pallida*. The observation of Colles regarding the apparent immunity of the pregnant mother and that of Profeta, that a "non-syphilitic" child born of syphilitic parents appears immune, were the first observations based on such a conception. As a rule a syphilitic cannot be superinfected. Pearce and Brown have shown experimentally that insufficient treatment will destroy this immune mechanism and that a second chancre may then be produced even while pathogenic microorganisms persist in the first. They have proposed two "laws," both of which aid in an understanding of late neurosyphilis following inefficient treatment. According to the "law of progression," various tissues of the body are not equally susceptible and reactive to syphilitic infection. Some groups are more susceptible than others, and with a progressing infection there is an orderly sequence from one group to the next. Interference with the course of the infection, as by treatment, may protect some tissues, but unless persisted in may fail to protect tissues higher in the scale. Reidel ob-

serves that certain tissues with relatively high resistance to invasion show little defensive reaction after finally becoming involved. If those observations are applied to the central nervous system the latter tissue may be considered relatively insusceptible to invasion with the spirochete, and at the same time unable to satisfactorily develop an immunity reaction when it does become so invaded. Thus the nervous system must depend for its protection upon the presence of immune bodies derived from other tissues. With destruction of the treponema, the general immunity reaction becomes less vigorous and the nervous tissues more easily fall prey to the invading parasite.

The second law formulated by Brown and Pearce, "the law of inverse proportions" assumes an inverse quantitative relationship in the intensity of consecutive reactions in syphilitic infection. Thus in the primary sore a defense reaction is set up. If this is vigorous and the chancre is extensive, the later manifestations are likely to be milder if they appear at all. Conversely, with a small, non-reactive chancre, the secondary and tertiary phenomena are usually more extensive. It has long been observed that in secondary syphilis with extensive cutaneous manifestations, central nervous infection is less apt to occur, whereas with but slight cutaneous involvement, later neurosyphilis is more frequent. Treatment which mitigates the severity of the primary and secondary reactions without completely eliminating the infection may predispose to involvement of those more highly resistant tissues such as the central nervous system.

Thus we may use the term accurately when we speak of prophylactic treatment of neurosyphilis. The efficiency and completeness of treatment of the primary and secondary lesions appears to be of considerable importance in determining later neural infection.

The weight of evidence indicates that intraspinal administration of salvarsanized serum has a distinct field and should be employed in all cases in which intravenous treatment has not

satisfactorily cleared up the central condition. For satisfactory results intraspinal treatment must be begun early. Tabes and taboparesis when usually recognized are past cure and usually past improvement. The future hope of therapeutic advancement in this field consists in early recognition of neutral involvement and intensive treatment before the appearance of localizing signs or symptoms. The routine which I have followed consists in the giving of an initial course of intravenous therapy, followed by re-examination of the spinal fluid. If improvement is noted the method of treatment is not changed. If no improvement in the spinal fluid findings has occurred, intravenous treatment is reinforced by intraspinal therapy, using the Swift-Ellis technic. In cases of early secondary syphilis it is safer to give three or four intravenous treatments before performing the initial lumbar puncture, so as to lessen the hazard of meningeal invasion subsequent to the puncture itself.

A negative blood Wassermann does not rule out central nervous system syphilis, even in those cases who have had no anti-leucic treatment. In case of doubt, a diagnostic lumbar puncture will give valuable information. The intrathecal pressure should be roughly estimated, cell count and globulin content should be recorded, and Wassermann reaction and goldsol curve should be determined.

No case of syphilis can be said to be successfully protected against late neurosyphilis until the spinal fluid has been studied and found to be normal.

Early treatment of neurosyphilitic lesions, before the development of localizing signs, offers the best promise, at present, of satisfactory therapy. Spinal fluid examination affords the only means of recognizing this early involvement.

Neither salvarsan nor mercury has proven highly efficient in the destruction of the treponema pallidum, once it has become firmly entrenched within the central nervous system. According to prevalent conceptions, this tissue is relatively less susceptible to invasion

but having once been involved it shows less ability to provide local defense reactions. An additional factor is the relatively low penetrability of nervous tissues to therapeutic agents. It is true that many neurosyphilitics respond satisfactorily to ordinary routine antileptic therapy, but while they may evidence temporary improvement, the majority retrogress. This is particularly true with regard to general paresis.

Silver salvarsan has not attained wide acceptance. Its use is based upon the hypothetical mordant properties of silver, serving more firmly to fix the arsenical within the cell substance. Most syphilographers still rely by preference upon the coincident or alternate use of mercury with salvarsan or neosalvarsan. More recently bismuth, either as metallic bismuth or in combination as a salt, has been substituted for mercury with apparently comparable results. Bismuth appears to penetrate into the spinal fluid more readily than mercury. The Swift-Ellis procedure appears to remain however, the most generally accepted and the most generally efficient plan of treatment in neurosyphilis. Many failures however, follow its use.

Sulpharsphenamine, a compound prepared for arsphenamine, formaldehyde and sodium bisulphite and differing from neorarsphenamine only in a side chain containing one additional atom of oxygen, is much stabler than neorarsphenamine or arsphenamine both in dry form and in solution. Its arsenic content is 22% as contrasted with 30% for arsphenamine. Voegtlin finds it of decidedly lower toxicity and of more constant spirocheticidal power. The variability in spirocheticidal action of different lots of neorarsphenamine is well known. From studies in trypanosomiasis sulpharsphenamine would appear to penetrate into the spinal fluid more effectively than either arsphenamine or neorarsphenamine, and it has therefore been seriously considered for use in the treatment of neurosyphilis.

Halloran has used sulpharsphenamine in twelve cases of advanced general paralysis and one of cerebrospinal

lues. Scarcely sufficient time had elapsed when the author reported his series, to draw conclusive deductions. All cases showed some slight physical improvement, the majority gaining anywhere from three to nineteen pounds in weight. During the six weeks of treatment there was little change in the mental state. The blood Wassermann of one patient and the spinal fluid of another became negative. Another positive blood and a spinal fluid became less strongly positive. The remainder showed no diminution in either blood or spinal fluid reaction. All of the paretics showed decreases in the spinal fluid cell count, ten being reduced practically to normal. Analogous changes were noted in the spinal fluid albumin and globulin content and in the colloidal gold curve. Although these results are not conclusive it may be that further investigation with sulpharsphenamine will elicit indications of its value in cerebrospinal syphilis.

Flumerin is a mercury compound, the disodium salt of hydroxymercurifluorescein. Like mercury it possesses relatively low spirocheticidal properties. Its pharmacologic action appears to be similar to that of mercury in that when tolerance has been exceeded, flumerin will produce stomatitis and enteritis. Like mercury, its exact action in the healing of syphilis is not clearly understood. Moore and Wassermann claim one distinct advantage over mercury, namely, a high therapeutic ratio. This drug is recommended for use in alternation with arsphenamine in the treatment of early syphilis. The results in neurosyphilis and in latent syphilis have shown no advantage over other active mercurial compounds.

Tryparsamide, first thoroughly studied in the treatment of trypanosomiasis by Pearce, has received rather extensive investigation within the last year, in a selected group of clinics, and reports are now appearing as to its value in neurosyphilis. This drug is by no means as active as spirocheticide as arsphenamine or neorarsphenamine. Even its trypanocidal index is but one-fourth to one-third that of these other drugs.

Two properties possessed by tryparsamide have suggested its possible value in therapeutics, namely, its high penetrability, and its general tonic action. As a spirocheticide, tryparsamide is distinctly inferior to salvarsan. Its use in early syphilis, where the aim must be to destroy the invading host, is therefore clearly not indicated. In latent syphilis and particularly where the nervous system has become involved, there is less probability of complete destruction of the spirochetes and attempts to improve the patient's general condition become of paramount importance. There is some natural tendency toward spontaneous recovery in syphilis. Often, to be sure, such recovery is not complete and the disease becomes latent. A drug such as tryparsamide acting primarily upon the body tissues improving the nutrition and increasing the natural defenses against the spirochete, is then clearly indicated.

According to present concepts, central nervous system invasion is primarily a matter of defective or ineffectual resistance and it is this in particular that tryparsamide is supposed to enhance. When in addition to this tonic action the drug has some spirocheticidal activity and when because of its easy penetration into the tissues, such activity is fairly well utilized, it becomes a particularly desirable remedy.

Patients under treatment have shown remarkable clinical improvement. One girl, aged 24, with congenital syphilis, during the first four weeks of tryparsamide treatment gained 13 pounds, even though her weight had remained constant under antecedent arsphenamine therapy. Lorenz and his collaborators, and Moore with his associates report comparable results. Parenchymatous neurosyphilis was clinically apparently arrested in nearly two-thirds of the series, and improvement was noted in an additional fifteen percent. In meningovascular neurosyphilis 90% were clinically arrested, with the other 10% improved. The blood Wassermann reaction became negative in 83% of Lorenz' series and in 6.6% of Moore's. It was reduced in 15% of

Lorenz' and in 20% of Moore's cases of parenchymatous neurosyphilis. Entirely comparable results were obtained in the spinal fluid findings.

Marie and Kohen have treated general paralysis by intramuscular injections of insoluble salts of bismuth, combined with subcutaneous injections of tuberculin. Bismuth penetrates the cerebrospinal fluid more rapidly than either mercury or arsphenamine and was therefore used by preference. The action of tuberculin appears to be non-specific, similarly to that obtained in the treatment of general paresis with experimental malaria infection. Of twenty cases eleven presented improvement of sufficient degree to be termed remission. The Argyll-Robertson pupillary reaction, the tremor, the speech and memory defects disappeared to such an extent that the patients returned to work. Two were slightly improved while five advanced cases remained unimproved. Three tabetics previously treated with bismuth alone, with no improvement other than diminution in the frequency of tabetic pains, experienced complete remission of symptoms under combined bismuth and tuberculin treatment, and in them the spinal fluid Wassermann became negative.

It is of interest to observe in this review that up to the present, no more potent spirocheticide suitable for clinical use has been found than arsphenamine, and that for increasing therapeutic efficiency, drugs are being investigated whose action upon the parasite itself is to a great extent of secondary importance.

PARALYTIC ILEUS.

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This type of acute intestinal obstruction, following abdominal operations is extremely formidable, and secondary op-

erations for its relief of no benefit unless instituted very early after the onset of its initial symptoms and it is for this reason we wish to call attention to the predisposing causes of this disease that one may be on their guard in dealing with cases where this dire calamity is liable to occur.

The type of case which apparently lends itself most liable to this post-operative complication is that in which a pronounced enteroptosis is present and at the same time requires a major abdominal operation. This complication is always to be gravely considered when advising any abdominal procedure, especially if it is of a chronic type, such as uterine fibroids of sufficient magnitude to require a complete hysterectomy, prolapsus uteri or any condition requiring an alteration of the architecture of the lower abdomen or pelvic structures. And for this mechanical reason, any injury to the intestinal structure or taxation of its innervation even for a brief period only will induce stasis or an intestinal rest. A bowel already crippled by malposition will not have the power to physiologically react to this insult and a first step toward the interference with the nerve and blood supply which opens the way to an absorption of those intestinal contents which produce paralysis is taken. The first injury to be considered in this connection is connected with the care and treatment of the intestinal canal prior to operation. Experience has taught us that the intestinal flora can be altered by diet and treatment. We also know that the cleanest intestine is the normal canal and that active catharsis renders it more septic and the bacteria more abundant and added to this active catharsis produces shock and lowers the general physiological resistance of the intestinal structure to the above insults.

Therefore the preoperative treatment of the intestinal canal must be based on the necessity of gentleness regardless of the time required. Mineral oil, copious drinks of water and a diet low in proteids, gentle massage and low enemas constitute the means to be employed. The next feature of the prophylactic

management of these cases is position during and after operation. The Trendelenberg position while readily recovered from in the normal case in cases of this type favors the obstruction necessary to start a paralysis. The musculature of the chronically weakened canal is unable to overcome the altered position induced by the Trendelenberg position by peristalsis and the added devitalizing influence of a general anaesthetic adds a still further handicap. Then the prone position after operation denies the canal the aid of gravity. For these reasons in cases of enteroptosis the Trendelenberg position is to be used in a moderate degree when imperative and avoided altogether whenever possible while immediately after operations the Fowler's position is to be instituted. I will also add that abdominal packs are to be minimized to the extreme of necessity also for the above reasons.

The successful treatment of cases of paralytic ileus depends on an early recognition of its initial symptoms. The first grave manifestation appears immediately after operation, and this is an unaccountable temperature of a hundred to one hundred and one accompanied by a pulse rate of a hundred or more, with a painless, effortless regurgitation of water taken by mouth. The temperature gradually rises, remains high and does not fluctuate as in a pyogenic infection. The regurgitation of fluids prevents absorption and the patient complains of extreme thirst. The fluid soon becomes fecal and contains bile. If proctoclysis is instituted large quantities of flatus are expelled. This may have a decided fecal odor with some color but it does not indicate that the condition is being relieved as the toxemia gradually becomes more profound, with rapid emaciation, feeble pulse and restlessness and the patient succumbs.

Of course cathartics and high enemas and all efforts at forcing such an intestinal canal to act are futile and harmful and surgery the only feasible means of relief. This implies some form of enterostomy. The time of operation is of the greatest importance. And the earliest possible moment after the onset of

the symptoms indicating the condition is the best time possible of course.

If a patient's temperature rises immediately after an operation where infection is not already involved say to 100 to 101 with pulse rate at 100 to 120 he should be watched for the development of some grave complication. On awaking from a general anaesthetic if he silently and painlessly, without effort regurgitates all water taken and complains of inordinate thirst and later begins to return the water with color and a fecal odor paralytic ileus is positive and immediate operation indicated.

Of the prophylactic measures to be employed none are of more importance than the choice of an anaesthetic. It has been frequently observed that in cases operated under regional and spinal anaesthesia ileus of all types is noticeably absent and that the bowels are much more easily moved by the usual measures. This would indicate logically that the involvement of the cerebral centers in inducing general anaesthesia influences the resistance of the parts involved in the surgical procedure and delays and hinders the physiological reaction essential to their functioning, while a regional or spinal block for a much shorter period arrests the function of the distal nerves from which they readily recover before any deleterious change can take place in the intestine. This minimizes the period of absorption if the canal is harboring the toxins conducive to paralytic ileus.

As to the type of operation and the part of the canal to be drained that must be largely governed by the operator and the demands of the case. McKenna advocates a high jejunostomy, others a low while others advise opening the gut at the most dominant and resonant point. The object to be most desired is to have an opening between stomach and as low in the intestinal tract as the obstruction will permit to allow the feeding and the absorption of fluids and at the same time to permit of adequate drainage. But one opening does not always furnish this in cases of paralytic ileus. We therefore advise a high jejunostomy as advocated by McKenna

but lower enterostomies on the right and left over the lumbar regions if the gaseous distension is not readily relieved by the jejunostomy. Because although the jejunostomy affords an avenue for the introduction of food and fluids it does not always afford sufficient drainage of the intestinal tract and the inert musculature will not produce sufficient reverse peristalsis to empty the canal of the toxic fluids it has stored below the enterostomy and this is essential to results, in this form of intestinal obstruction.

Conclusions.

1. In major abdominal operations enteroptosis is always to be considered a predisposing cause of paralytic ileus.

2. Preoperative treatment in cleansing the intestinal canal of a case where enteroptosis exists is of extreme importance in the prevention of paralytic ileus following major abdominal operations.

3. In such cases the Trendelenburg position is to be avoided if possible as it is conducive to an inviting cause of paralytic ileus, malposition of the intestines which the weak musculature of the intestines are unable to overcome in cases where enteroptosis exists.

4. The successful treatment of paralytic ileus depends on an early recognition of its symptoms and immediate operative interference. Simpler measures are not to be tried, enemas and cathartics being harmful.

5. As general anaesthesia favors the development of this condition we should place enteroptosis in the same category with kidney, heart and lung complication when a major operation is to be considered and resort to regional and spinal anaesthesia as the method of necessity.

6. Entire dependence should not be placed on a single enterostomy opening in the treatment of paralytic ileus but multiple openings resorted to if free drainage is not at once established by a single opening because in this type of acute intestinal obstruction the entire canal lies as a limp tube from which fluids will but gravitate and there is no direct or reverse peristalsis. Local infiltration anaesthesia suffices for these operations.

THE HISTORY OF NURSING

Abstracted from "History of Nursing" by
Bock & Nutting.

The ancestry of modern nursing goes back to the first baby, born of a human mother.

As the first mother gave to her first child a bath and then proceeded to rock, to feed, to clothe, and to care for the child, she gave to succeeding generations the impetus for another great and glorious profession.

It has long been known that birds and animals have a keen sense of self preservation. Berdoe cites many instances as to how they care for themselves and others of their species.

Think for a moment of the seasonal migration of certain birds, think as to how well their nests are constructed. Recall that you have seen cats and dogs eat grass damp with the morning dew, and remember that the buffalo and deer go long distances to lick salt. Berdoe tells us that apes control hemorrhage by compression, that snipes treat their broken legs by binding the splint to the affected part with grasses and holding it there with mud and clay.

The oldest known records are Egyptian, and to these, we must turn, for our first enlightenment of diseases and the treatment of same by medicines and nursing.

In the museum in Leipsic today are books with references to drugs and their actions as they were understood from 4688 to 1552 B. C.

Many of the medical references in the old Testament of the Bible are there as the result of information obtained by the Hebrews when they visited Egypt.

In that time it was customary for the desperately ill to be placed in the streets where they might be told by the passers-by what they had found useful in a similar illness.

Many of the recipes and their results were kept in the temples where all might have ready access to them in time of need.

In those early days the records state, that on the whole, the Egyptians were

clean, they bathed once daily, they understood and used the enema, liniments were popular, opium was used, the dead were embalmed and dental work was not unknown. However, there has not been found so far any evidence suggestive of hospitals being in use then, nor is it yet established that nursing existed in any organized form.

There lived in Central Asia, long before the Christian era, a people of an advanced civilization. Their books, Veda, are of the oldest known. Those of the Arjur-Veda are real and treat of major and minor surgery, of bandaging, of children's diseases, of nervous and genito-urinary diseases.

The ancient Hindoos thought prevention of more importance than cure and for time immemorial they have inoculated against small pox. There were then female masseurs for women, the lying-in rooms were especially well ventilated and the midwives were to keep their finger nails short. Every village or community in that remote age had its health officer and later they established a building for the care of the sick and the sick's animals. This building was to be "large and roomy and exposed to the winds; obnoxious noises, odors, and smokes were prohibited. There were a good body of attendants distinguished for their knowledge and their cleanliness, and lastly a healthy cow giving good milk was to be kept close by."

The Hindoos had 15 varieties of bandage. They wrote of obstetrics, fevers, phthisis, leprosy, etc. They invented the enema bulb which remained as the pattern up until the 18th century.

King Asoka in India in 226 B. C. had hospitals erected along the routes commonly used by the travelers. They were furnished with the best drugs and instruments of the day. Skilled physicians appointed at the expense of the state administered them. The best era of Hindoo medicine was from 250 B. C. to 750 A. D. When Buddhism fell, public hospitals were abolished and from that day to this the "former greatness and glory of that wonderful age has continued to sink to ever lower levels until now it is a state of poverty, ig-

norance, and superstition."

Later still, one finds countless references to medicines and nursing in Grecian literature. Fever patients were given a liquid diet, cardiac patients were given one food at one time of the lightest nourishment and nephritics were placed on a strict milk diet. Salves, plasters, poultices, and fomentations were used constantly for the relief of pain.

Today we have but little accurate knowledge of the part played by women in nursing during the long pre-Christian Era, but from that date till now they have gradually taken on more and more of the work. The dawn of Christianity opened to them new fields for honorable and active careers.

The earliest orders of female nurses were church women who banded themselves together to cooperate with the church in visiting the sick and caring for the needy. Such a woman was called a Deaconess. As such, she constituted the first district nurse as she attended the sick in their homes, and she was perhaps the first to adorn a special costume.

Without doubt these women, laid the foundation for modern nursing. They rose to great favor in their countries and prospered for a long period of time but gradually they disappeared until about the 12th Century when but a few remained in all the world and they were in Constantinople.

The history of nursing and hospitals is so closely interwoven that it is difficult to treat the one without reference here and there to the other.

Hospitals originated in the early Christian era in the church, in the home of the bishop or in the home of one of the wealthy members of the congregation. As the patronage increased additions were made to the building in the form of wings or extensions.

As early as the 3rd Century separate diseases were being cared for in separate wards. A concrete example of these early institutions is seen in the Basiliads, named after Basil, its founder. It was first erected in 370 A. D. in Southern Asia Minor for the especial care

of lepers. Within a short time it had become very popular and there soon grew up around it a city. Basil then erected separate buildings for lepers, separate buildings for the insane, etc., as well as comfortable homes for the physicians and nurses (Deaconesses).

In those early days many of the poorer or middle class of people went into nursing as an atonement for their sins or as a substitute for an otherwise unhappy life. On the other hand many of the rich went into it purely from an aspect of philanthropy.

In the latter part of the fourth and the first part of the fifth century A. D. there lived in Rome two wonderfully rich, well bred, and noble women. One of them being unhappily married, divorced her husband, entered a convent and spent her wealth lavishly in building hospitals for the poor. So beloved was Fabiola, that when she died all Rome mourned her loss.

The other, Paula, built hospitals along the road from Rome to Jerusalem that the weary travelers might ever find rest and comfort and a place where a wound might be dressed or an illness combated.

Quotations from writings of that date describing the management of a patient, "They covered her warmly, put warm bricks on her abdomen, rubbed her feet with vinegar and salt, cooled her head with rosewater and when she perspired covered her with a quilt."

Besides the monastic hospitals, during the middle ages, it was necessary to construct military hospitals because of wars and pilgrimages of the Crusaders to the Holy City. These were built along the route of greatest traffic through England and France to Jerusalem. The caravans constantly met with misery and suffering at the hands of robbers and bad men and other religious believers.

From the 12th Century, we find hospitals being built somewhat simulating the institutions of today. On the whole, they were large and roomy with a high ceiling. They were built around an open court. Many of the wards had a stream of running water coursing

through them (to give comfort and coolness to the patients.)

In those institutions the nurses were using catheters, enemas, night lamps and basins. Draw sheets were covered with leather and the pillows were padded with moss, horse hair, or feathers and the beds with straw.

In that same century there sprang up an organization independent of the church whose duty in addition to nursing was to be pure and chaste. They called themselves the Bejuines and for 600 years they thrived and added a glorious page to the history of nursing.

In the 16th and 17th centuries nurses and doctors began to have trouble in the hospitals mostly over the question of authority. For a time, however, nursing, independent of the Church, grew in favor and esteem and recruited many of its members from the best families of the land.

In the middle of the 17th Century Desault and other famous surgeons were having single iron beds substituted for the large wooden ones previously designed to carry from 1 to 5 patients. About that same time paid help or assistants to the sisters or Nuns (nurses) were employed. A little later the hospital managers finding their duties becoming ever more complex and numerous created a new role, matron of nurses, whose duty it was to superintend the nurses, to employ the help, to meet at certain intervals with the hospital managers, etc., etc.

As it had been on the Continent, so had it been in England. The hospitals were found by the Church, by private individuals or by the State and the nursing was carried on largely by the Sisters, up until the 16th and 17th Centuries when hired help was gradually substituted.

The Religious orders gradually suppressed nursing as a Vocation. The clergy continually interfered with the Sisters, restricting and hampering them on the absurd ground of impropriety. In time practically all the better class of women were ushered out of the profession.

Their places were eventually filled

with paid help whose duties were, "to make all the beds on one side of the ward, to scour and to make clean the bed and floors, to keep clean the cans for beer, the broth pails, plates, etc." These women were ill paid, ill fed, and ill kept. They were overworked, often ignorant, usually coarse and common in their birth, and manner of living. They were given to drink, to immorality, and debauchery. Such in general was the state of affairs in 1850 when the great and noble English lady, Florence Nightingale, began to interest herself in scientific nursing.

Coming of one of the very best families, given a splendid education, possessing wealth and social position, her immediate entrance into nursing provoked astonishment in the minds of the neighbors and a source of profound worry and anxiety to her parents and immediate family. However, she studied nursing not only at home but crossed to the Continent where she pursued diligently a course at the Kaiserwerth on the Rhine and later at the Hotel Dieu in Paris, with Vincent de Paul Sisters of Charity. Having thus capitalized her natural talents she returned to England.

A little later, all the world learned of her work in the Crimean campaign where she was first known as the Lady of the Lamp. When the war was over she again returned to her home and devoted herself to writing and to the organization of hospital training schools for nurses. This she did against the advice of a majority of the physicians and surgeons and notwithstanding an outburst of public opinion.

However, in spite of so widespread disapproval, at the St. Thomas Hospital, London, on June 16, 1850, she opened her school with 15 probationers. These women were taught not merely to be nurses, but to become executives, teachers, organizers, and hospital superintendents.

Many institutions were later taken over by her disciples and in time these were made clean, renovated, improved, and properly disciplined.

Thus the old order gave way to the new. Ere long, many gentlewomen

were again in nursing, as the "Chinese wall of prejudice, religious, social, and professional was broken down."

Nursing again became an honorable profession and a way of earning a livelihood quite above reproach.

The Nightingale Training School for Nurses was the first of its kind. Within a short while other leading hospitals throughout England and in the United States adopted the idea and from then on scientific teaching became a regular part of the nurses hospital curriculum.

Another great and lasting benefit bestowed on hospitals and nursing by Miss Nightingale was sanitation. She blazed the trail of fresh air, open windows, pure water, clean bed clothes, daily bath to the patient, kindness and gentleness.

She also pointed out the inestimable benefit of a capable Superintendent of Nurses and to this date all successful hospitals have honorable and competent nurse supervisors.

As exigences necessitated hospitals have taken on more nurses, the hospitals and training schools have assisted these women in specializing in this or that branch of hospital work. Many of them after graduation have gone into X-ray work, others have become laboratory technicians, still others have taken up operating room technique, some are obstetrical nurses, and many limit their activities to post-operative care.

Alumni associations have been formed throughout the world, some of them limiting their membership to the graduates of a particular hospital and others opening membership to graduates of any school.

Still more recently in our own country each state required a certain grade on examinations (oral and written) conducted by a State Board of Examiners, of all hospital graduates before they can become licensed to practice in the respective states.

Thus, from a very humble beginning a great and glorious profession has matured.

Next to the patient the nurse is unquestionably the most important person-

age in the hospital, the doctor not excepted.

In closing this abstract, permit me to suggest that a careful perusal of "A History of Nursing" in four volumes by Bock and Nutting will not only be illuminating but interesting as well.

These volumes reveal in detail the life work of remarkable men and women, many of whom the world has hardly heard of.

CONSERVATIVE GALL-BLADDER THERAPY.

W. W. Blackman, M.D., Director Blackman Sanitarium, Atlanta, Ga.

The gall-bladder presents one of the most frequent problems of the abdomen. That it is receiving an increasing amount of consideration and study is apparent in the current literature of the day.

A great deal of headway has been made toward tracing the avenues of infection of this viscus. Types of organisms borne to it in the blood stream select it for their nidus. Lymph flow from distal infections in the abdomen conveys their colonists to its walls. Direct migration from a contiguous portion of colon wall may give entry. Billings and Rosenow, independently, have demonstrated the actual transfer of disease organism from an original site of infection to a new or secondary location as when a tonsillar infection produces a deposit in the gall-bladder. The organisms most commonly found in the diseased gall-bladder are strepto, penumo, and staphylo-cocci, colon and typhoid bacilli and bacillus pyocyaneus. Be it remembered that such a gall-bladder now itself becomes a focus ranking among the first five in the body in point of its potentialities as a source of infection to other tissues.

To diagnose infection in this cryptic organ is to sound a call for action. Its importance hangs upon a triad of sequelae, viz: progressive pathological changes in the bladder wall and probable stone formation,—reflex disturbance of

the sympathetic system and of liver and stomach function in special consequence, the maintenance of an infective focus in the abdomen.

Gall stones are found in 20 per cent of all autopsies upon adults and in 50 per cent of those upon women who have borne children. Yet gall stones are found in only 1-3 of cases of proven gall-bladder disease. We have long known of the great prevalence of the stagnant and infected gall-bladder without stone and that "dyspepsia," infectious joint troubles, migraine, toxic headaches, catarrhal jaundice, "neurasthenia," "chronic appendicitis," "ulcer," and "biliousness" were many times but disguised manifestations of gall-bladder disease. Still, too often, except for outspoken cases in which there was typical gall-bladder colic and obstructive jaundice calling aloud for surgery, these cases have gone untreated and indefinitely diagnosed or unsuspected.

Though one is disposed to concede that cholecystectomy is the most direct and thorough-going procedure for putting an end to gall-bladder disease, the clinician finds deterrents to this course in many instances. Not infrequently he is unable sufficiently well to clinch his diagnosis to warrant the rather distressing major operative procedure, yet is fairly convinced of the involvement of the gall-bladder and the value that would accrue from its drainage.

Again, there many times exist physical disability rendering surgery hazardous, economic obstacles to hospitalization and fear or other insuperable disinclination to operation upon the part of the patient. But, independent of these deterrents, the physician who has had any considerable experience with duodenal drainage of the gall-bladder will confidently employ this measure through choice in the majority of his gall-bladder cases. This is strongly attested by Niles, the pioneer and most prominent advocate of non-surgical gall-bladder drainage in the South, who has records of over 3200 drainages and who bases his faith upon a large observation of comparative therapeutic results—surgical and non-surgical.

A few words in review of the method may be permissible. A small caliber duodenal tube with an Einhorn or Lyon metal tip is swallowed, sips of warm water being drunk, perhaps, to facilitate its passage into the previously empty stomach. The small amount of drainage from the tube at this stage of its progress will reveal upon litmus the characteristic acid reaction of the gastric secretion. Our patient now lies on his right side and the tip of the tube is propelled by peristalsis into the duodenum. This phase usually consumes from fifteen to forty-five minutes and its completion is marked by the return of alkaline secretion through the tube. About two ounces of magnesium sulphate solution, 25-33 per cent, is now lightly forced in and the tube is clamped for approximately ten minutes. As first demonstrated by Meltzer, this produces for about an hour relaxation of the duodenum and gall duct and painless contractions of the gall-bladder. The first bile which flows back through the tube is from the gall ducts. The next is from the gall-bladder and more concentrated. The last is from the hepatic ducts and is the thinnest of the three specimens. When the drainage is completed, the bile specimens being collected in serial bottles, Ringer's solution is introduced and the tube is quickly removed.

This procedure, performed two or three times per week for six to ten times, has given most gratifying results by ridding the gall-bladder of infected bile; dark, thick, cloudy bile; gritty material and small or soft stones. Flaky and stringy mucus, epithelial cells, pus cells and blood corpuscles are variously found in the material withdrawn.

While the capacity of the normal gall-bladder is 1 1-2 to 2 1-2 ounces, there have been instances of the organ yielding by this method more than a pint of undoubted gall-bladder bile as cited by Dr. Frank Smithies of Chicago. Dr. Vincent Lyon of Philadelphia, who developed the technique of non-surgical biliary drainage, urges it (1) as a means of diagnosis of biliary diseases; (2) as an alternative method of treatment of many types of gall-bladder and duct dis-

ease in which there arises a question of opinion as to whether surgery is or is not emphatically indicated and (3) as a supplementary method after surgery which has not been completely successful.

Stagnation and infection underlie nearly all gall-bladder disease. Stagnation is produced by fasting in fevers, irregular eating and "reflex" and other known causes not to be discussed in a short article. When cholesterin concentration is too high in the bile, as in fevers and pregnancies, a gall stone nucleus is formed. Succeeding infections deposit successive rings of mucus, bac-

teria, debris, calcium and cholesterin. In this manner, over the years, the gall stone is slowly built up.

A German observer breaks recovered gall stones in half and polishes the inside surfaces. This enables him to study the rings as one would those of a tree and to read there the history of one's gall-bladder disease. The reader will grasp the fact that if all infected and stagnant gall-bladders were opportunely drained stone formation could not occur. More important, however, would be the recognition and abortion of early cholecystitis.

SOUTHERN MEDICINE AND SURGERY

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CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

North Carolina Tonsil and Adenoid Clinics.

Theodore Roosevelt as a child was terribly handicapped. He couldn't go to public school because of his handicaps. He couldn't match his fellows. He couldn't defend himself nor could he compete with them in his studies. His health and physique were poor, his ability to study was even worse. Fortunately for him, and the world, his parents were very unusually able to do for him what relatively few parents could and in his case he was enabled to overcome these handicaps. He himself says that when glasses were first fitted to his eyes it opened up for him an entirely new world. Before that he had not known but that he saw what others saw, but then he realized how little he had seen before.

In his case the overcoming of these handicaps transformed a seemingly helpless child, which in any ordinary circumstances would have become a non-producing charge upon society into the personification of mental and physical energy and ability.

Of all the thousands of other children who are as much handicapped as he only a few are able to even know that life for them might have been different. To be sure, overcoming their handicaps will not make Roosevelts of all of them but it will help all of them and will add tremendously to the sum total of human achievement.

North Carolina, knowing that teaching by percept must be accompanied by example has for six consecutive years con-

ducted, in an educational campaign, Tonsil and Adenoid Clinics—telling parents that their child was suffering from infected tonsils was one thing but to get them removed was another. The only way to drive the lesson home was by example. The quickest and best way was for the state to actually make possible the removal of this handicap, then let results speak for themselves. The State has done this for something over 9000 such children and the results have spoken for themselves. In every community where clinics have been held parents universally exclaim at the wonderful improvement in operated children. In every clinic this year there have been many more applicants than could possibly be cared for. Argument is no longer necessary to persuade parents to come in with their children for they have seen for themselves.

In this sense then the clinics may be said to have fully accomplished their original purpose. The lesson has been quite universally taught and well learned. Even the most skeptical have become convinced that it is good policy to correct these defects which hamper and retard physical and mental growth of children.

Those of our readers in North Carolina, are already familiar with the working of this plan but the many others in other states may be interested to know that during the school year each child is inspected for all physical defects by state employed school nurses and a rather complete report blank filled and kept for record. Also a card is made to be taken by the child to its parents showing them all defects found and advising that they take the child for treatment to a physician or dentist of their own choosing.

The local county authorities are then consulted and at their request and with their cooperation a schedule of Tonsil and Adenoid Clinics is made out. Two or three weeks preceding the date for each place, a state nurse goes there and advises the parents of all children with infected tonsils and adenoids that a clinic will be held when their children may again be examined by a competent

specialist chosen by the local authorities and that if this examination shows the need of operation this will be done.

These children are requested to report on different days at some chosen place, which is usually the graded school building of the county seat.

The clinic personnel consisting of eight to ten graduate experienced nurses, two doctors and the orderlies carry a complete hospital equipment and after removing desks and cleaning the building set up beds in wards and the operating room, anesthetic room and laboratory.

Each morning the children reporting for that day come without breakfast with parents. Thorough physical and laboratory examination is made then they are undressed and put to bed. After operation the child is taken to another ward for recovery and hence no child before operation sees an operated child recovering. Neither does any child see the operating room for they are first put to sleep in a quiet room adjoining. Everything possible is done to avoid sights or sounds that might arouse fear in children.

All children remain in bed over night constantly watched by nurses and doctors and not discharged to go home until early next morning. Then all beds are remade, the wards cleaned and made ready for the new assignment.

Under such conditions it is surprisingly seldom that any child suffers either mentally from fear or physically. And with this system twenty-five each day are operated easily and under the most approved conditions.

A fee of \$12.50 is charged for each child, however, no child is denied the operation if unable to pay this small amount. All are given exactly the same care and no one of the clinic personnel except the one nurse who collects the fees knows who pays and who does not.

The sad part of it is that only 100 in each place can get this benefit and many must go away disappointed. The query is constantly heard, "What then will happen to little Willie Blank or Mary Blank, that couldn't get in,—they will never be able to take him or her to a

specialist to have it done and he or she needs it so badly."

What indeed will happen to this child? That is a problem before the state which must be solved.

Pernicious Quackery.

Scientific medicine should never rest content until a cure has been found for every preventable disease. Every encouragement should be extended the man who is really trying. Conservative minds should hesitate to condemn new or revolutionary ideas until investigation has given a basis for condemnation. Almost every epoch making discovery in the field of medicine has run the gamut of ridicule and discredit. Conscientious persons have mistaken the real from the spurious, and in honest zeal for the protection of human life they have made the life of those announcing newly found truth, almost unbearable.

While this works a cruel hardship on the one who finds and announces a real benefaction to humanity yet perhaps it is as it should be, perhaps it does more good than harm. Perhaps if it were not so there would be even more fake announcements than there are.

Inflicted humanity grasps at every phantom ray of hope and the more hopeless the infliction the more easily are the afflicted seduced. Sure cures for this and new discoveries for that are broadcast direct to the afflicted ones for mercenary motives. On its very face it is obvious that such announcements may be positively declared spurious for no real discoverer has ever in history gone direct to the afflicted with his claims but has rather made his announcement to the scientific minds of his profession that he might get their opinion and approbation.

Within the past few days, in fact during the Chicago meeting of the A. M. A., several lay papers carried scandalous columns of quack propaganda. First a Philadelphia paper announced that the cause of cancer had been discovered and a treatment perfected that was producing remarkable results. This announcement referred to Glover's

cancer "serum" of Toronto. It was back in 1921 that this "serum" had been announced and a special committee was appointed by the council of the academy of medicine of Toronto to investigate and report its merits. The committee reported that it was unable to find any evidence to show that the "serum" had produced a cure in any case definitely established as cancer. Not only this committee but also other of the countries most scientific men investigated and made tests. All agreed that the Glover cancer serum had no deterrent effect on the growth rate of tumors, nor had it ever cured any tumor.

The other startling announcement carried by many papers of the country during the same week referred to Koch's cancer "cure." This also is a rehash of previous exploitation schemes for this same nostrum. It seems Koch is of Detroit and less than a year from his graduation announced his alleged "cure." Since this time (1921) he has conducted a "sanitarium" which broadcasts to the public typical "cancer cure" booklets. Statements in this literature condemn the treatment of cancer by surgery, X-ray and radium but claims, by many testimonials, that his nostrum turns the trick.

To be sure, the individual has the right to spend his money as he chooses but the most pernicious feature of such exploitation is the awakening of false hopes with those who are grasping at every straw, and diverting their attention to these useless if not actually harmful things during the time they should be receiving helpful treatment.

Some day perhaps a real cure for cancer may be found even more efficient than the present surgery, X-ray and radium, but until it is found—and proven—the profession has the same moral obligation to protect its clientele from quack imposters that it has to combat an epidemic disease. The doctor who sits idly by while such pernicious quackery is being exploited is as culpable as the one who sits idly by and watches an epidemic ravage his people.

Dr. William D. Haggard.

The President-elect of the American Medical Association, Dr. William D. Haggard, is southern born and southern educated; he is a southern man. He was born in Nashville, Tenn., received his medical degree from the University of Tenn., and has practiced medicine in Nashville all of his professional life. He has been president of the Southern Surgical Association and of the Tennessee State Medical Society. His father was one of the founders and the first president of the Southern Surgical Association. During the war he served as Major and Lt. Col., both at home and overseas. His election as president of the A. M. A. is not only the recognition of a very superior man but is also a recognition of medicine in the south. The south is proud of Dr. Haggard.

MEDICINE

Wm. B. Porter, M. D., Dept. Editor.

The Exercise Cardiac Functional Test in One Hundred Cases of Heart Disease.

The exercise cardiac functional test is performed by requiring the subject to undergo some sort of vigorous exercise. In applying this test, Duane W. Propst, Chicago (Journal A. M. A., June 28, 1924), has used a body-bending exercise repeated twenty times in forty-five seconds, and has taken the blood pressure at the intervals suggested by Brittingham and White. Among 100 men, there were sixty-six cases of mitral regurgitation, eight of mitral stenosis, fourteen of aortic regurgitation and twelve of combined valvular lesions. All were free from any evidence of heart failure at the time of the examination. The results were at variance with those of the proponents of the test. The blood pressure reaction of all of the subjects with mitral regurgitation was normal; that is, there was neither a delayed rise nor a prolonged fall in the systolic blood

pressures. Moreover, the diastolic pressures during the test did not vary more than 4 mm. of mercury from the pre-exercise levels, in spite of the fact that seven men gave a history of decompensation at from two to five years prior to my examination. On the other hand, the time required for the pulse to return to the preexercise rate was definitely prolonged in 53 per cent of the cases. In thirty-five of the series of sixty-six cases of mitral regurgitation, the pulse did not return, after exercise, to the rate at rest for from four to fifteen minutes. Two of eight patients with mitral stenosis gave abnormal blood pressure reactions to exercise. Of fourteen patients with arctic regurgitation, only one gave a delayed rise in the systolic blood pressure. A tardy return of the pulse to normal after exercise was observed in half of the subjects. The effect of exercise on twelve men handicapped by combined valvular lesions was interesting. In every case the pulse rate remained more rapid than normal for more than four minutes following the twenty body-bending exercises. The average time required for the pulse to return to the preexercise level was eight minutes. In no instance was there a prolonged rise or a delayed fall in the systolic blood pressure. Since only 3 per cent of his cases with organic heart disease reacted to exercise by the so-called abnormal blood pressure response. Propst believes that this form of functional test can have little prognostic value.

Further Observation on Sickie Cell Anemia.

Sickle cell anemia is a familial and hereditary disease showing no sex preference and probably confined to the negro race. The series studied by V. P. Sydenstricker, Augusta, Ga. (Jour. A. M. A., July 5, 1924), includes ten family groups; in fact, in every case in which it has been possible to examine the relatives of patients with this condition, a familial incidence has been found. The disease is present and recognizable at birth; on two occasions blood from

the cord and from the proper circulation of infants of "sickle cell" mothers has been found to present the specific changes. The condition is probably a familial and hereditary defect of the spleen and the blood-forming organs, with a resulting change in the erythrocytes which predisposes to hemolysis and phagocytosis. Anemia, when present, is the result of excessive blood destruction, activated perhaps by factors that in a normal person would be innocuous. There are resemblances between this disease and familial hemolytic icterus. The jaundice in both is due to increased red cell destruction; the type of anemia is similar, and the evidences of erythropoietic activity seen in the blood are much alike. Both diseases exhibit hemolytic crisis with increase in jaundice and in pigment excretion, with diminution in the red count and hemoglobin, and with abdominal pain referable to the spleen. Conspicuous differences are: the specific type of poikilocytosis in this disease; the changes that occur in the erythrocytes in vitro and postmortem; the unusual susceptibility of the erythrocytes to phagocytosis, and the absence of any diminution in their resistance to hypotonic salt solution. The frequent occurrence of leg ulcer in this condition is an unexplained feature of interest. Pathologically, the changes in the spleen and the bone marrow are striking, and have been sufficiently constant to warrant the assumption that they are specific. There has been no demonstrable association between the occurrence of this disease and the presence of any infection or infestation. Eight of the authors' patients have been syphilitic; four had malaria; two were infested with *Strongyloides stercoralis*, two with *Necator americanus* and one with *Ameba histolytica*. Treatment of these conditions had no effect on the blood picture. Blood, urine and stool cultures by various methods have been constantly negative. Dark field examination of the blood and, in two instances, of the bone marrow was without results. Animal inoculation experiments have also been fruitless. Necropsies have been per-

formed on five of these patients. A report is given. The most striking feature in these cases is the shape of the red blood cells in all the tissues of the body. This change is most marked in the bone marrow, in which many of the cells are excessively attenuated. In sections, few of the erythrocytes are round; many are fusiform and sickle-shaped; the remainder present all sorts of bizarre forms similar to those seen in the fresh blood preparations that have been allowed to stand for several hours.

Gynecology and Obstetrics

Robert E. Seibels, M. D., Dept. Editor

The Use in Sterility of Antispasmodic Drugs.

There is a definite group of sterile women through whose tubes gas can be passed with difficulty, or only after several attempts, or not at all, although the tubes are not sealed by adhesions, and are anatomically normal. The factor that prevents the passage of the gas in such cases is probably spasm of the sphincter-like circular muscle of the interstitial portion of the tube. The same factor can presumably prevent the entrance of spermatozoa into the tube, and so cause sterility. For the recognition of these, Samuel R. Meaker, Boston (Journal A. M. A., June 28, 1924), proposes the following test: A first insufflation is done without preliminary medication. If no gas can be made to pass through the tubes, or if gas passes only when the pressure has been raised to 150 mm. or more of mercury, a second insufflation is done a day or so later after the administration of benzyl benzoate. If, on the second occasion, gas passes through tubes previously impermeable, or if it passes at a pressure of less than 100 mm. of mercury in cases in which a high pressure was previously required, we can consider that an obstructive degree of spasm of the tubal musculature has been demonstrated as a factor in the case. When it is shown by this

test that a patient belongs to the group under discussion, and there is nothing else at fault with the wife or husband, then the administration of antispasmodic drugs post coitum is indicated for the treatment of sterility, and should give good results.

Volvulus of the Fallopian Tube.

A case of volvulus with tuberculous pyosalpinx simulating gonorrheal pyosalpinx is cited by Joseph J. Wells, New York (Journal A. M. A., July 5, 1924). The diagnosis of tubal torsion has ever been made before operation. The most frequent diagnosis made has been acute appendicitis. The symptoms are those of an acute abdominal crisis. The onset is usually with severe abdominal cramps, which at first are generalized, but soon become localized to the lower abdominal quadrant, often on the side affected, but sometimes referred to the opposite side. The temperature and pulse during the first few hours may be normal, but soon, owing to toxic absorption, both temperature and pulse begin to rise. The white blood corpuscles are increased, with a relative increase of the polymorphonuclears.

Orthopaedics

Alonso Myers, M. D., Dept. Editor

Orthopedic Preventive Medicine.

The prevention of deformities is the subject of a paper by Henry Bascom Thomas, Chicago (Journal A. M. A., June 28, 1924). He brings to the attention of the medical profession a realization of the effective work now being done, and of the possibilities of wider cooperation within the medical profession and with the various social agencies concerned with children and with industrial conditions. Five types of cases frequently recurring in orthopedic practice, are presented to demonstrate the possibility of the effective prevention of deformity: fractures; congenital clubfoot; rachitic deformities; traumatic spastic paralysis, and epidemic poliomyelitis. In the preven-

tion of rachitic deformities, cooperation between the pediatrician and the orthopedic surgeon should be brought about by more frequent consultations regarding the care of these children, from both the standpoint of feeding or treatment of rickets and the prevention and correction of deformities. An outstanding example of community cooperation for the prevention of deformities is afforded by the experience in Chicago in connection with the epidemic of poliomyelitis in 1915, when the commissioner of health used his authority to enforce the hospitalization of infantile cases. A wing of the county hospital was appropriated for this purpose, and all agencies dealing with children were enlisted in the effort to discover and report cases. In the hospital, the correct position of the paralyzed body and the limbs was strictly maintained during the acute and subacute stages of the disease; and, in the cases requiring it, the patient was dismissed with plaster supports. The necessity for follow-up care was realized, and the cooperation of a nursing organization was obtained for this purpose. A few of the nurses were especially trained for infantile treatments, which were given in the homes of the patients dismissed from the hospital, with periodic visits to a supervising orthopedic surgeon regarding further treatments. Such a plan, actually working, practically eliminated later corrective operations on this group of children, leaving only the stabilizing operations as the main work the surgeon now gets. A factor in preventive work, which, though seemingly negligible, is in reality one of the strongest obstacles encountered, is the psychology of the crippled child. The outstanding element is the fact that the crippled child, whether in poor, moderate or opulent circumstances, is almost invariably a spoiled child. The influence of the unfortunate child on its parents and relatives is such that, in a lamentably large number of cases, its unwillingness to be taken to a physician or a hospital results in failure to secure any treatment whatever. Thus, many children afflicted with various types of bone, nerve

or muscle diseases, in which early treatment would prevent a lifelong crippled condition, are too often not seen by a physician at all. Others may be seen only after the actual deformity takes place. Prompt hospitalization of the patient has advantages over treatment in the home, however favorable the home conditions may be, not alone because of the superior organization of the physical environment in the institution, but also because of the opportunity afforded there for correcting bad habit formation in both the child and the parent. The crippled child is unfitted for normal life in two ways: from the standpoint of physical disability and in respect to his psychologic attitudes. It is in this connection that the hospital or the special school is of peculiar value to the child. From a social standpoint, the child's new attitude and behavior are fully as valuable as the correction of the physical deformity, especially as the reform is in most cases a lasting one, the beneficial effects of which continue to be shown in home and school life after the child's release from the hospital.

Pediatrics

Frank Howard Richardson, M.D., Dept. Ed.

Effect of Tonsillectomy on the General Health of Twelve Hundred Children.

The operation for the removal of tonsils and adenoids has become such a common one that it is no longer restricted to cases in which the tonsils are obviously diseased. A so-called prophylactic tonsillectomy is now generally performed, so that the indications for the removal of these organs need not be very definite. The real value of the operation can be determined only by repeated examinations of the children before operation and at intervals after the operation. Such a study has been made by Albert D. Kaiser, Rochester, N. Y. (Journal A. M. A., July 5, 1924), to show what the operation has done for 1,200 children contrasted with an equal number who were not operated on. An

analysis of the complaints in the group operated on shows that by far the most common one was mouth breathing. Ten hundred and fifty-seven out of the 1,200 were mouth breathers. This complaint was relieved in 88.5 per cent of the children. Fifty-four of these children showed incomplete removal of the adenoid tissue, which may account for the failure to get relief in some of these children. A history of frequent sore throat occurred in 674 children studied before operation. Ten per cent of those complaining of symptoms failed to get relief from the operation. One year after operation, only 5 per cent complained of frequent sore throat. During the last two years, however, frequent sore throats returned to 5 per cent additional of the children operated on. Frequent head colds were complained of by nearly half the children in this group previous to operation. During the last three years, 146, or 27 per cent, were still subject to frequent head cold, and forty-one were having this infection for the first time since operation. Chronic hoarseness existed in fifty-four of the children before operation, and in fifty-seven three years later; of this number, four children showed this symptom for the first time after tonsillectomy. The relationship that exists between enlarged cervical glands and diseased tonsils has not been definitely established. It seems fair to conclude from these cases that considerable time must elapse after tonsillectomy before any great change takes place in the glands. At the time of the operation, 30 per cent of the children were termed underweight. At the time of reexamination, three years after operation, 12.5 per cent of the children were 7 per cent or more underweight, which represents a very definite improvement in the nutritional status of these children. Discharging ears, either acute or chronic, had existed in 136 out of the 1,200 children operated on before the time of operation. During the three years subsequent to the operation, forty-two children had a similar complaint. Of this number, twenty-six had discharging ears for the first time after their tonsillectomy. At the time of oper-

ation, it was learned that sixty-nine children gave a history of repeated attacks of bronchitis. The incidence of this infection during the three years following operation was twenty-four cases, of which eighteen of the patients had their repeated attacks since the operation and had never had any before. It would seem that subsequent to the operation, the incidence of most infections had been lessened during the three-year period. A comparison of this group with the control group shows that tonsillectomy offers a child considerable relief from such common complaints as sore throat, head colds and mouth breathing. It lessens the chances of having discharging ears and their complications. It assures some protection against glandular infection, but is no guarantee against it, and it does not assure the immediate disappearance of large cervical glands. It does not influence favorably or unfavorably infections of the larynx, bronchi and lungs, as they occur equally in the two groups. It does not prevent scarlet fever or measles, but may influence the severity of the infections. It seems to lessen the incidence of diphtheria by removing fertile soil for the diphtheria bacillus. It has not influenced the incidence of chorea or rheumatism. It has shown a lessened incidence of heart disease over a period of three years. It has definitely reduced malnutrition in the group operated on as compared to the group not operated on.

The Use of Sulpharshenamin in Vincent's Angina and Stomatitis in Children.

Fifteen cases of Vincent's angina are reported on by Louis H. Barenberg, New York, and Max W. Bloomberg, Montreal (*Journal A. M. A.*, July 5, 1924). Eight were treated by intramuscular injections alone, and seven by intramuscular injection, combined with local application of sulpharphenamin three times daily. The dose was 0.1 or 0.2 gm.; five received one injection of 0.1 gm., two children received two injections of 0.1 gm., and only one required two injections of 0.2 gm. Five had one intra-

muscular injection as well as local applications for three days. No patient required a second injection. Two patients, the first treated, had local applications of neo-arsphenamin for eight days, followed by one injection of sulpharsphenamin (0.1 gm.). They healed within two days after this injection. The average duration of disease in those patients who simply were injected was six and one-half days; of those on combined treatment, in whom 0.2 gm. of sulpharsphenamin was given, about four days. In one case, the patient had a marked peritonsillitis; there appeared to be an abscess, and incision was advised. Since the child was able to take nourishment, it was decided to defer operation. The inflammation disappeared within two days of an injection of 0.1 gm. of sulpharsphenamin. Twenty-seven cases of stomatitis likewise were treated. Of these, nineteen were typical cases of ulceromembranous gingivitis. Some of these were treated simply by intramuscular injections; in others, this method of therapy was combined with local applications of sulpharsphenamin. The former group took about one week to heal, and in the latter, in which local applications reinforced systemic treatment, the gums resumed a normal appearance in about five days. In some instances, pyorrhea alveolaris also responded to these measures.

Roentgenology

Robt. H. Lafferty, M.D., Dept. Editor.

The report of the Committee of "X-ray and Radium Protection" as published in the Brit. J. Radiol. 1924, XXIX, 19 is summarized as follows:

The known effects of overexposure to the X-ray and radium on the operator to be guarded against are: (1) visible injuries to the superficial structures, which may result in permanent damage, and (2) derangement of internal organs and changes in the blood, which are especially dangerous because of their insidious onset.

As general precautions the authors recommend limitation of the working

hours to not more than seven a day, outdoor life on Sundays and two half-days each week, and an annual holiday of one month or two separate fortnights.

Protective measures are described for the various types of installations. In all cases the X-ray tube should be enclosed as completely as possible by protective material equivalent to from 2 to 3 mm. of lead. In doing fluoroscopy, the operator should further protect himself with lead-rubber gloves and an apron and with goggles. In radiography, the operator should stand behind a leaded screen. Treatment rooms should have their walls (and, when necessary, the floor and ceiling) lined with lead from 1 to 3 mm. thick. All rooms should be well ventilated, well lighted, and above ground level.

With regard to the prevention of injury from electricity the authors state that concrete floors should be covered with wood, cork, linoleum, or rubber. Overhead conductors should be tubes or rods and at least 9 ft. above the floor. All metal parts should be earthed, and all main and supply switches should be accessible and distinctly marked.

Radium should be handled only with forceps and carried from place to place in long-handled boxes lined with 1 cm. of lead. When not in use, radium should be stored in boxes with walls of a thickness equivalent to not less than 8 cm. of lead.

Eye, Ear, Nose and Throat

J. P. Matheson, M.D., Dept. Editor

Antidiphtheric Serum in Ocular Infection.

A clinical and experimental study was made by Ben Witt Key, New York (Journal A. M. A., Jan. 19, 1924), of the use of antidiphtheric serum in ocular infection in ninety-one cases. Key has also employed pasteurized sterile milk in two cases. In the latter (cases of advanced hypopyon keratitis), the constitutional reaction was peculiarly violent and no noticeable effect on the ocular

lesion could be traced with any degree of certainty. On the contrary, his experience with antidiphtheric serum as a nonspecific or paraspecific agent—both from clinical observation and in experiments on rabbits—has proved conclusively the efficacy of the serum in combatting pneumococcic and staphylococcic infections of the refractive media of the eye. The clinical cases included hypopyon keratitis; infections of the anterior segment after penetration; panophthalmitis; and ulcus serpens. In all but two of the cases of hypopyon keratitis the ulcer was located in the center or near-center of the cornea. An observation of significance, since this area is least protected by systemic resistance, being furthest from the source of nourishment (the blood). The treatment was similar in all cases: Cauterization with phenol (concentrated) followed immediately by alcohol (50 per cent.); in advanced cases, multiple incisions were made through the ulcerated area, followed by the phenol and alcohol cauterization. Antidiphtheric serum, from 1,000 to 5,000 units (varying with the age and weight of the patient), was injected at the earliest possible moment, this dose being repeated or modified in from twenty-four to forty-eight hours, depending on the reaction observed after the previous injection, and repeated as often thereafter as seemed advisable in the individual case. The usual local treatment with hot fomentations, atropin and petrolatum containing mercuric chloride (1:5:000) was usually routine in all the cases. In from twenty-four to forty-eight hours after the initial injection, the hypopyon is reduced or has disappeared; if not, a complication (as occurred in four cases, three of these syphilitic and one unaccounted for) may be found to explain the effect. Besides the noticeable effect on hypopyon, almost invariably there is relief of pain, rapidly subsiding conjunctival and iritic reaction and a clearing away of ulcer debris, such as does not usually occur in these cases, the ulcer itself taking on a clear and clean appearance early in the process of repair. In the cases of penetrating wound (infection), in almost

every case there is relief of pain, diminished conjunctival and iritic reaction, and a quieting of the infectious process as though it were transformed from a violent, inflammatory one to a definitely mild type. Equally good results were obtained in panophthalmitis and in ulcus serpens.

Hospital and Sanatorium

John Q. Myers, M. D., Dept. Editor

Hospital Service in the United States.

The Council of Medical Education and Hospitals of the A. M. A. given in the Journal of the A. M. A., LXXXII, 2, p. 118, 1924, interesting statistical data of the hospitals in the United States. There are now 6,830 hospitals in the United States which have a total capacity of 755,722 beds which are occupied on the average by 553,133 patients. More than one hundred beds each are provided by 1,324 hospitals; 1,027 hospitals have between fifty and one hundred beds each; 1,632 hospitals have between twenty-five and fifty beds each; 2,112 hospitals have between ten and twenty-five beds each, and 619 hospitals have less than ten beds each. In 1906 there were 2,411 hospitals; in 1909, 4,359; in 1914, 5,037, and in 1918, 6,063. There are 1,736 hospitals maintained by Government agencies, such as federal, state, county, or city; the rest are supported by churches, fraternal orders, industrial agencies, individuals, local hospital associations, et cetera. General hospitals number 5,005; truly general, 3,793; limited general, 445; and hospital departments of institutions, 767. Special hospitals total 1,825, of which number 593 are for nervous and mental diseases only; for tuberculosis, 476; for maternity, 262; for isolation, 1111; and other smaller groups account for the rest.

Urology

A. J. Crowell, M. D., Dept. Editor

Dr. John M. Culligan of the Mayo Foundation, Rochester, Minn., in a paper printed in the June, 1924, *Journal of Urology* on "Renal Stones Permeable to the X-ray" called attention to the composition of stones which do not cast shadows. He claims that the calcium oxalate stones cast the densest shadows, and that those composed of calcium phosphate cast shadows slightly less dense and that pure cystin, xanthin and uric acid stones may, or may not cast shadows. Whether they do or not depending upon whether they are composed of a mixture of substance, one of which, such as a calcium salt, being especially radiographically opaque.

He calls attention to Arcelin's contention that stones may or may not cast shadows, depending upon the compactness of the molecules, even though the chemical composition is the same. He also calls attention to the fact that some observers claim that cystin stones do cast shadows, and others claim that they do not. This he says, "may be due to difference in the arrangement of the molecules" or to the presence of other salts in the stone's composition.

He also calls attention to Steven's report of a case of ureteral stone composed of urates, which was negative in the original roentgenogram, and which was diagnosed by means of pyelograph. He cited Grave's report of two cases, diagnosed by similar areas of greater translucency, in the pyelogram. To prove that structural arrangement was a fac-

tor, he gave a patient a capsule containing pure cystin to take by mouth. Roentgenograms made immediately failed to show any evidence of the capsule, although a bismuth capsule given at the same time as a control, was distinctly revealed. This would seem to corroborate Arcelin's original contention that structural arrangement is a factor in radiographic density.

It is a well known fact that shadowless renal calculi often produce shadows after their surface is impregnated by colloidal silver following pyelography. This means of diagnosis is rarely available now as most urologists feel that colloidal silver is too dangerous to use. He says that he has been unable to find any cases in which shadowless calculi have been brought out by sodium iodid or sodium bromid.

He concludes as follows:

1. Shadowless renal stones are usually composed of pure cystin, xanthin or uric acid.
2. Stones of such composition may produce shadows if other salts are mixed with them, or if their structural arrangement is favorable.
3. Shadowless renal ureteral stones can be diagnosed by areas of greater translucency in the pyelogram, or the ureterogram.
4. Stones that do not cast shadows in the roentgenogram will usually not be visible when the kidney is fluoroscoped after it is delivered through the incision.
5. It may be advisable to perform nephrectomy in these cases when doubt exists concerning remaining fragments of stone.

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ACUTE EXUDATIVE MIDDLE-EAR CATARRH.

Milton R. Gibson, M.D., Raleigh, N. C.

Middle-ear diseases are commonly divided into those in the development of which bacteria play no part, and those which are bacterial in origin. Those coming under the first classification are termed *catarrhal*, and those of the second division are designated as *inflammatory*. The casual factor in the *catarrhal* group is the mechanical action of pressure produced by occlusion of the Eustachian tube; in the *inflammatory* group it is, of course, the bacterial invasion. Affections classified under either group may be acute, sub-acute, or chronic, and in general, it may be said that without proper attention, the acute or sub-acute forms of any of these otologic affections, will practically always tend to become chronic, despite of the fact that a very general opinion prevails that slight "ear trouble" is a matter of small importance.

The pathological changes of acute middle ear catarrh are, according to Phillips, largely confined to the pharyngeal portions of the Eustachian tube; the actual middle-ear structures and their enclosed spaces being little altered. The mucous membrane of the tube becomes reddened and swollen, and the lumen of the tube is much narrowed or entirely closed. This stoppage of the Eustachian tube results in a retraction of the tympanic membrane at the opposite end of the passage. According to the teachings of Boeninghaus the mucous membrane of the middle-ear has the property of absorbing the air which the middle-ear spaces should normally contain. With the lumen of the tube closed by *catarrhal* swelling, this faculty of air-absorption causes a negative pressure in the middle-ear spaces, and in an effort at compensation the drum is forced in-

ward in the direction of the promontory, by pneumatic pressure in the external auditory canal.

The deafness, which is one of the most characteristic features of aural catarrh, results from the blocking of the Eustachian tube and the shutting-off of the middle-ear from the pharynx. The retraction of the drum membrane serves to crowd back the ossicles, and deafness, tinnitus, and the frequently complained of "full feeling of the ear" ensue. Vertigo may even occur, but this is decidedly uncommon. The partial immobilization of the ossicle chain, and the disturbance of the normal relationships which the members of that chain bear to one another, is also partly responsible for these symptoms. Dan MacKenzie mentions that there may be some direct interference with the activity of the labyrinth, produced by the increased pressure of the foot-plate of the stapes in the oval window.

In the exudative form of middle-ear catarrh, the exudation is most frequently caused by the inflammatory process in the mucous membrane. Nevertheless, we are told by Politzer that excessive swelling of the tubal mucous membrane and impermeability of the air in the tympanum, cause a transudation of serous fluid which is free from bacteria. The process of air absorption draws the drum inward, as we have already seen; this process continues until the elasticity of the tympanic membrane has reached its limit. The tendency to vacuum formation will bring about a hyperemia of the mucous membrane, from which the transudate finally flows into the tympanic cavity.

In the sero-mucous catarrhs the affection extends for the most part over the surface of the middle-ear. Politzer warns us, however, not to lose sight of the fact that in recent catarrhs which extend from the naso-pharynx, the swelling and hypersecretion may be

limited to the lower portion of the Eustachian tube, without extending into the tympanic cavity. These are the cases of intumescence of the pharyngeal orifice of the tube, which are associated with hypersecretion, and which occur in the course of an acute or chronic nasopharyngeal catarrh. They are seldom primary, and in certain individuals there will be a recurrence with every cold in the head. These peculiar catarrhs may heal without any disturbance in hearing, remaining throughout a strictly local affection, but they may extend at once, or after several relapses, until they penetrate the tympanic cavity.

Acute middle-ear catarrh is particularly prone to appear during childhood, and is only too frequently overlooked and neglected. The type of child most likely to be affected is the one who is "always taking cold," and who will usually be found to possess hypertrophied tonsils and large masses of adenoid vegetation. Progressive deafness in a child is often regarded as merely an evidence of "inattention" or "stupidity," and by the time it has become so pronounced as to be recognized, the catarrhal condition has advanced so far as to have become chronic and it will be impossible to restore the hearing to normal. Therefore, the benignity of such a condition should never be permitted to induce neglect, as it may easily be the forerunner of a permanent disability quite beyond the remedial powers of even the most learned and skilled otologist.

Often the initial deafness will be the first symptom noticed. Pain is often—but by no means invariably—present, but it is seldom severe enough to cause marked distress. The otoscopic picture is detailed in many textbooks, but nowhere have I found so clear or impressive a description as was given by George W. MacKenzie of Philadelphia in a lecture delivered to a class of which I was a member in February of this year:

The otoscopic picture is distinctive, but to detect its details requires trained powers of observation, for the faint yel-

low fluid behind the drum is not so easy to discern. In the milder grades of the disease the fluid does not entirely fill the middle ear, but strikes a level, running more or less horizontally across the drum. This level is the *niveau line* which appears as a faint black thread thinner than a hair, with a slight meniscus concavity upward, produced by capillarity at the extremities and at the umbo—should the fluid have mounted to that level. The color of the upper half of the drum is gray, but below the *niveau line* there is a barely perceptible straw-color added to the gray. Below the line the drum membrane often presents a waxy appearance. If fluid has been present in the cavity for some time there will be "water-logging" of the membrane, which will show up like frosted glass. At this stage the cone of light will have disappeared, the roughness of the drumhead bringing about loss of the light reflex.

If it is possible to force air through the Eustachian tube by inflation with the Politzer bag, bubbles will appear in the fluid, each bubble having a black line for its circumference, similar to the *niveau line* itself. These bubbles move about in a lively fashion, and if the fluid be thin, they will eventually rise to the surface and burst.

During inflation by an assistant, the changes in the *niveau line* and those marking the bubbles can be watched for. As inflation takes place, the *niveau line* descends, and frequently the fluid will be entirely evacuated. But if the fluid be dense, which will be evinced by the slow movement of the bubbles on inflation, the *niveau line* will not be lowered, and the fluid will remain in the cavity, and though the bubbles will rise to the surface, the viscosity of the fluid will prevent them from bursting. The upper outline of the bubbles will now be identical with the *niveau line*, which will appear as a series of bulges. In the course of a few days or weeks the bubbles will break and their outlines be converted into cups separated by peaks, the *niveau line* being correspondingly altered in shape, though the old outline of the bubbles

may still be seen as faint concave arcs, stretching from peak to peak. With the condition of viscid secretion these changes are obvious and may be seen in their progressive stages, for as time goes on, the viscosity increases, because more fluid elements are being constantly absorbed. The terminal state of the untreated case shows a series of waxy pyramids at the bottom of the drum, peaks pointing upwards. Occasionally there is seen a waxy band stretching across the drum, its edges concave. It, too, speaks for dried-up exudate. Retraction and limitation of mobility of the membrane may or may not be evident. Transparency is diminished on account of the exudation, which has dried on the inner surface of the drum.

A more severe initial grade of acute exudative catarrh shows the entire middle ear full of fluid which may be, as in the milder cases, thin or viscous.

Here the otoscopic picture is different from that described above. There is no niveau line and the whole drum partakes of the yellow tinge that was before seen only below that line. The normally indistinct posterior margin of the hammer handle disappears and is replaced by a sharper posterior margin that, by its position nearer the anterior margin, gives an appearance of narrowing of the handle. This is due to the presence of an opaque fluid between the true unattached posterior margin and the drum. The membrane is soon water-logged, so that it becomes dull; the cone of light disappears; the entire drum looks waxy with a yellow tinge superimposed upon it. There is no bulging nor retraction.

In that form of inflammatory catarrh accompanied by an outpouring of seromucous exudate, which often begins in the course of an acute rhinitis, or an attack of influenza, we have a condition intermediate between simple exudative catarrh and acute otitis media. This is described by Politzer as beginning with lancinating intermittent pains, and marked congestion of the vessels of the malleus and of the external auditory canal, while there will be protrusion of the tympanic membrane, either as a whole, or only in certain areas, usually the pos-

terior superior quadrant. In most cases instead of actual pain there will be a sensation of fullness and numbness in the ear, such as is experienced when water has entered the ear while bathing. This annoying symptom is specially pronounced when the pharyngeal orifice to the Eustachian tube is swollen. There may also be complaints of pressure within the head and tinnitus is more or less in evidence. Autophonia—the peculiar loud resonance of the patient's own voice—is noted by Phillips as a most distressing symptom in some cases. Politzer quotes Gruber as stating that this is more noticeable in unilateral catarrh than it is in those cases where both ears are diseased. Fortunately autophonia often disappears as soon as treatment is instituted, and seldom persists for any length of time after the catarrhal condition has been corrected.

The successful treatment of acute exudative middle-ear catarrh includes the re-establishment of the patency of the Eustachian tube, the removal of the secretion from the tympanic cavity, and the reduction and permanent cure of the hypertrophy of the membrane lining the cavity, and its consequent production of exudate. Should one fail to remove the secretion from the tympanic cavity by inflation, and find by otoscopic examination the picture of an exudative catarrh, he will find that his patient will be relieved by doing a myringotomy, and inflation immediately afterward. Before doing the inflation, a small gauze wick should be placed in the auditory canal in contact with the drum, and upon its removal after inflation a string of the accumulated mucoserous exudate will be found attached to it. Inflation should be done each day following the myringotomy so long as there is an accumulation of the serous exudate. It is surprising how few of these treatments will be necessary in the acute cases to give the patient a comfortable ear with normal hearing. When the myringotomy is delayed the treatments are prolonged in a greater proportion.

A general survey of the patient's systemic condition is essential to the mastery of ear disease if a permanent cure is expected; and this examination should concern itself especially with conditions in the nose and nasopharynx. Kerrison asserts that tubal catarrh is almost invariably present in children suffering from pharyngeal adenoids. Inspection of the ears of children in whom a physical examination has demonstrated the presence of adenoids will usually show the drum membranes to be markedly retracted, and may even be noticeably congested. In all such cases the pharyngeal growth should be removed, special care being observed to avoid injury to the cartilage at the mouth of the Eustachian tube.

Dan McKenzie, the eminent British otologist, has emphasized the following advice: *In cases of Eustachian obstruction, whether in children or adults, examine for adenoids.* He especially emphasizes, also, the necessity of getting rid of those growths which "cluster in the fossa of Rosenmüller behind the nasopharyngeal orifice of the Eustachian tube. Posterior ends of the inferior turbinate, if enlarged, should be snared. Deflected nasal septa should be straightened by submucous resection."

Often these surgical measures will be all that is needed to restore a full measure of hearing, and the permanent cure of the catarrhal condition. In the majority of cases, however, the process will have progressed too far before corrective measures were undertaken, and we must devote our attention to restoring the patency of the tube and draining the tympanic cavity of its abnormal contents. Politzer originated the method of inflation which bears his name, and his plan has never been abandoned or been replaced by anything superior for the treatment of these catarrhal conditions where there is a bilateral affection of equal severity and requiring same amount and type of treatment. Frequency of treatments depends upon the necessity for inflation.

Catheterization of the tube is frequently practiced and has advantage over Politzerization where the condition

is unilateral, or for any reason the tubes are to be inflated separately. Before this is undertaken, the nose and naso-pharynx should be carefully cleared of all secretions, and made as clean as possible, so as to minimize the danger of forcing any infective agents into the deeper portions of the tube or tympanic cavity. Phillips uses an application of 2 per cent cocaine in adrenalin 1:5000 along the floor of the nares and about the orifice of the Eustachian tube, which serves the double purpose of reducing the swelling of the soft tissues and facilitating the introduction of the catheter.

Treatment of acute exudative catarrh, as outlined, will usually suffice to restore normal conditions, but every patient who has passed through an attack of acute middle-ear catarrh is liable to recurrence and should not be lost sight of. It is well to impress upon the parents of children in whom these middle ear conditions are found, the danger to hearing that may result from neglect, and to use whatever influence we may possess with the public at large, to promote attention to these seemingly trifling affections, and to demonstrate at every opportunity the practical results of prompt and intelligent care of every "ear case."

CONCERNING THE SELECTIVE AFFINITY OF DRUGS.*

Wm. deB. MacNider, M.D.,

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When drugs are introduced into an organism for therapeutic purposes we usually think of their action in terms of a hit or miss effect. The action for many of us is, to say the least, indefinite. We fail to realize that drug action in many instances is a most dependable and selective action and that if we would

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ascertain upon what such a selective affinity rests we would greatly advance therapeutics and stay clear of many dangers.

The fact has of course been known for years that certain arsenical compounds have an affinity for protozoa such for instance as the malarial parasite. It was also known that arsenic and its derivatives were toxic for the cells of the host that harbor such parasites and this fact has prevented the use of arsenic in sufficient quantities to sterilize the blood and tissues of these parasites.

Ehrlich first produced an arsenical compound detoxicated sufficiently for the cells of the host and retaining sufficient specific toxicity for the *Treponema pallida* to permit its use in the treatment of syphilitic infections. This compound has but little toxic effect on other protozoa. There is good evidence to make us believe that it is furthermore only specifically toxic for a given strain of the *Treponema pallida* and this may explain the variation in the degree of its effectiveness in different syphilitic infections. The exact explanation for this specific selective affinity is not known.

Epinephrine (Adrenalin) is a drug that picks out in the animal organism the endings of post gasiglonic fibers to act upon. It stimulates these endings to act in the way they normally act whether that be to increase or to decrease functional response. It acts only in this way.

Curare or Indian Arrow Poison acts only on the endings of motor nerves and it paralyzes these endings so motor impulses can not enter the muscles. Such animals develop a general motor paralysis including the diaphragm and succumbs to a respiratory type of death.

Atropine Sulphate is one of the most stable and valuable of drugs. Its action is widespread for it has a selective affinity for a variety of nerve endings; secretory nerve endings in particular. It depresses such endings and lessens their normal function. If the atropine molecule be chemically changed to pro-

duce a substance homatropine its action becomes restricted to one pair of nerve endings, the oculo-motor nerve endings in the circular muscle of the iris. The pupil dilates under its influence. It has no other action. The explanation for such examples of specific selective affinity has not been solved and until they are, the great field of specific chemical therapy will remain closed.

The fact is of course generally known that the anesthetics of the methane series, chloroform and ether have a specific affinity for the cells of the central nervous system. Such substances depress and finally suspend the functional response of these cells and establish a state of general anesthesia. The question arises why do these substances select cells in this location? What is the chemical difference between these cells and the cells of other organs that gives them a specific affinity and binding power for such anesthetic substances?

Some year ago Myer¹ and Overton² formulated the theory that the selective action of ether and chloroform for the cells of the central nervous system was due to the richness of these cells in a lipid or fatty material in which the anesthetic substances were soluble. The anesthetics picked out and went into these cells on account of the presence of such lipid material. The theory does not explain what the anesthetics do to suspend the function of the central nervous system after they gain access to or into the cells. At a later period Verworn³ tried to explain just what this action was. He ascribes it to the anesthetic hindering and in part suppressing oxidation processes in the cells and such processes have much to do with the normal life and response of cells.

When individuals and animals are anesthetized by ether and especially if chloroform be used there is usually a transitory decrease in urine formation. If the individual or animal has an acute or chronic type of Brights Disease the decrease in urine formation may not be transitory but permanent. Frequently

an anuria is established which is not due to any failure of the circulation⁴. After a few days of such a suppression, symptoms of uraemia, or an acidosis, or both develop and death results.

For some years we have been interested in this laboratory in trying to explain why certain diseased kidneys have a selective affinity for the general anesthetics while the normal kidney only shows such an affinity to a very slight extent.

If the normal kidney be sectioned and properly stained for lipid or fatty material, the glomeruli or capillary tufts and the epithelial cells of the convoluted tubules are found free from such material. These two parts of the kidney structure are certainly mainly responsible for urine formation and this is especially true for the highly specialized cells lining the convoluted tubules. The normal kidney does show stainable lipid material in the cells which line the ascending and descending limbs of Henle's loop.

If similar microscopic studies be made of the kidney the seat of an acute or chronic type of Brights Disease, there is found to occur not only an increase in the lipid material of the cells of the loops of Henle but this material appears in the cells of the convoluted tubules which form urine and to a less extent in the endothelial cells of the capillaries of the glomeruli. The disease process has so influenced the metabolism of these cells that lipid material in them is not utilized as it should be but is deposited^{5, 6} and⁷.

When an anesthetic of the methane series is given to such an animal with the renal epithelium sinsetized as it were for the anesthetic on account of its increase in lipid material these cells apparently take up more of the anesthetic substance on account of its solubility in the lipid material and these cells like those of the central nervous system become anesthetized or so histologically altered that their normal functional activity, urine formation, is decreased or arrested.

Some years ago the observation was

made in this laboratory that the intravenous use of an alkaline solution would protect the kidney against the toxic effect of an anesthetic.⁸ and⁹) No definite explanation was offered for this observation. Recent experimental observations would appear to explain how the alkaline solution effects a protection against the anesthetic substance.⁽¹⁰⁾

A portion of one kidney has been removed from animals with acute and chronic types of Brights Disease and the relative amount of lipid material determined by proper staining methods. To such animals a solution of sodium carbonate or bicarbonate was then administered and kidney tissue removed for study. In such tissue after the use of an alkaline solution the stainable lipid material had either failed to stain or had in large measure disappeared.⁽¹¹ and¹²⁾

From these experiments it would appear that the use of an alkaline solution decreases that element (lipid material) in renal epithelial cells which gives to these cells an affinity for the anesthetic substance. When such a change in composition has been induced these cells take up less of the anesthetic and are protected against the over action of the anesthetic substance. The observations not only in part explain the selective affinity of an important group of drugs for certain cells but they offer a method by which susceptible cells, the result of disease, can be protected against the toxic effect of the general anesthetics.

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PRENATAL OBSTETRICS.

M. F. Frizzell, M.D., Ayden, N. C.

Prophylaxis, for the first time in the annals of medicine, has become, during the last quarter of a century, the buoyant spirit of medical activity, and the battle ground on which the profession is achieving its greatest victories.

With surgery, gynecology and the other branches of medicine, modern science has placed obstetrics on a co-ordinate plane, hence its proper practice requires the wide knowledge and the skilled technique of educated physicians. In the practice of this division of medicine the profession and the laity have in late years had no unsettled opinion as to the value of intelligent attendance at childbirth; nor have they recently entertained any doubt as to the value of intelligent service following delivery; but as to the value of intelligent supervision of pregnancy, indecision and lethargy have to a vast extent prevailed. This attitude toward pregnancy, however, is changing. Both profession and public realize as never before the importance of prenatal care and henceforth the general tendency to accentuate this phase of obstetrical practice will be observed.

To the thoughtful mind, prenatal endeavor, in usefulness to guard against impending disasters, is second to no other branch of medicine. Various health departments, hospital social service bureaus and women's leagues have been doing in different sections of the country, during the last few years, intensive work in this field, and its practical value, in some measure, has been an asset; sickly mothers and weak ba-

determined. Available statistics indicate that the percentage of deaths among infants and mothers who have had prenatal supervision is 50 per cent less than among those unsupervised; that puerperal eclampsia has decreased from 10.5 per cent to .4 of 1 per cent; and that miscarriage has decreased from 15 per cent to .2 of 1 per cent. Employed by these agencies are well-trained nurses whose duties are to keep close observation of expectant mothers. Advice with regard to bathing, clothing, exercise, fresh air, diet and laxatives is given. When trouble threatens the patient, the family physician, or hospital is consulted. And in this fairly thorough way, in thickly populated communities, one nurse, at reasonable cost, has been able to care for as many as 1,000 patients.

So it seems that well-organized and well-functioning agencies in prenatal obstetrics are doing a work of considerable benefit to the communities in which these agencies are operating. But these organizations have been rather widely scattered over the country, and have been lacking in sufficient co-operative relationship to make this service generally felt. And they have ascertained that they can not do this work singly or collectively, alone, but that they must have, for effective results, the active interest of medical men, especially those physicians whose practice presents obstetrical opportunity.

In North Carolina, at the present time, more than 50 per cent of pregnancies are without supervision, and as large a percentage of confinements are attended by non-medical individuals. We see, therefore, here in our midst, a large field which is unoccupied by trained minds and skilled hands, a field out of which the science of obstetrics should drive as rapidly as is feasible the ignorant and the unfit in obstetrical service. There can be no better economics for any community or commonwealth than that obtained by providing suitable service to our childbearing women.

Healthy mothers and strong babies are

bies are a liability—a serious drain to the health, happiness and the body politic. High mortality rate, chronic ailments, prolonged incapacitation are, frequently, the fruits of bad obstetrics—the absence of prenatal supervision, and faulty delivery through carelessness and ignorance.

In duty to the profession and in duty to humanity physicians, everywhere, should grapple with this problem, the problem of practically occupying that portion of the obstetrical field which still hovers in the darkness of ignorance and in the misfortune of poverty. This problem has its solution. The county health office, the county board of health and the county organization of physicians are the agencies to effect this solution. In close relation, their lively, enthusiastic, persistent cooperation can, with vision which clearly beholds the possibilities of the enterprise, with wisdom which understands the proper channels of procedure, with conviction which inspires the confidence of the public, and with energy which knows nothing save victory, provide efficient service in the care of every pregnant woman through pregnancy, at confinement and following confinement. Provide the health office with adequate clerical force, one or two nurses to cover the county as thoroughly and as frequently as practical experience indicates; require every physician to promptly report to the county health office every maternity engagement to the end that a nurse may be sent to personally instruct in the things pertaining to the best interest of the case and that appropriate literature may be sent from time to time to the expectant mother, and the problem of getting prenatal instruction to every case of pregnancy becomes well nigh solved. This personal touch will unquestionably impress upon the patient, in whatever sphere of life she may be, the interest of the profession in her welfare, which will merit and obtain her interest in the profession and in the literature designed for her instruction. And will not this service to a given community, in the interest of some preg-

nant woman, generate the desire of the other expectant mothers of that given community, whose cases have not been reported and in consequence remain unknown to health authority, for prenatal instruction? And in this way will not practically all pregnancies be properly safeguarded?

In the pursuit of this line of preventive medicine, discomfort and peril incident to pregnancy and childbirth should be largely eliminated. When childbearing women once realize that the discomforts of pregnancy are unnecessary; when they once understand that general intoxication, known as toxemia of pregnancy, a condition into which so many expectant ones have drifted and died, is preventable; then they will avoid these discomforts and dangers by giving painstaking, daily attention to skin, bowels and kidneys to enable these emunctories to properly discharge the effete materials of the body as required for conservation of health and life, and commonwealths need not longer worry about race suicide. People will be so enlightened as to enable childbearing women to guard against disasters of ignorance and neglect, and the poverty stricken, who are unable to employ trained attendants at childbirth, will know something of the principles of obstetrical technique which will protect them against the filth of midwives. By educational campaigns for the diffusion of practical prenatal, natal and postnatal knowledge the public, on observing its salutary effects, will rally to its support; and with strong public opinion in favor of this very humane service, it is reasonable to presume that its wholesome influence will enter every home.

Another phase of this work is infant welfare. How much infant sickness and infant mortality are preventable? By reason of the fact that the solution of this problem begins with pregnancy prenatal instruction is indispensable to this fundamental service. Better babies are born of mothers who have had prenatal care than from those who have not had this care! More mothers nurse their babies when guided by intelligent

minds than when not thus directed. How much good to infants would be accomplished by providing suitable service to those mothers or expectant mothers who are infected with venereal diseases and with malaria? How many cases of miscarriage could be saved by immunization against typhoid fever and small-pox? Infant welfare merits our best thought and requires wisest consideration in the development of the race. Infant hygiene, with the same agency in prenatal work, can be, and should be taught through the first two years of infant life. Its value to the human family in lessening sickness, in lowering the rate of mortality, in the production of healthier babies and in the development of stronger citizenship might be incalculable.

There is one more obstacle in obstetrical practice which must, sooner or later, be overcome. It is that of providing professional service to those in labor who are without money to pay for the service of a well-trained physician at this time. We have no county hospitals for such patients; nor have we county or public funds with which to provide such service. Accordingly this class of our people are badly neglected; and without outside help these people must be denied the benefits of good obstetrics which means much to them directly and which means much to our social order indirectly. Their ailments, their sufferings, their misfortune, resulting from the want of prenatal, natal and postnatal professional service, are reflected upon the general level of society and in a decided measure retard the progress and development of civilization. Should not county government seek some remedy for this hurtful condition, this sore spot in humanitarian principles? Inasmuch as this class of work is in the sphere of medical activity, we, as physicians, should assume the leadership in the solution of this and similar problems. All of these problems are closely related and intimately associated and their solution must come with us as leaders in the creation of strong public opinion, based upon facts.

OBSTETRICS IN SURGERY.

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My reason for presenting this subject tonight, is the earnest hope that every man present will take part in the discussion.

Obstetrics, today, is taking its rightful place in professional thought and service. Ideal obstetrics, means Preventive Gynecology. More than half the ills, causing invalidism, and discomfort, in the lives of women past middle age, have their origin in child-birth; and that much of this is due to faulty professional service, is established by the published, and authentic findings of statistics carefully taken in a borough out from New York, on the Jersey side, which show that more traumatic accidents, more post partem infections, and more distortions and deaths in the new born, occur in families served by professional men, than those that occur in the service of Midwives. This count being taken in this place because of the fact that more than half of the Obstetric service is rendered by Midwives.

Where is the cause for this? Are the teachers of Obstetrics not giving to this subject the importance that it deserves; or is the cause in the ranks of "the men in the field," who are not willing to give this function, with two lives at stake, always, ample time for physiologic fulfillment? The greatest part of Obstetric service, will always be rendered by the general practitioner, and they are the men best able to consider, and to discuss, the phase of the subject that will be presented.

And please remember, will you, that "When men smile, and agree, progress weeps."

IT IS NOT all—of surgery—to cut. The trend of the work, and of the teaching today, is surgical. The causes for this are two. First, bred by the zeal of the earnest, and enthusiastic workman, in real recognition, and development of real pathology, an audience is told, that "there is no remedy but the knife." Second, the student—caught by the spectacular and commercial glare—mis-

takes "cutting" for surgery, and forgets that cutting is only safe, and life-saving, when grouped with other "remedial agents," and serves to complete the armamentarium of the surgeon.

Obstetrics, and the forces involved in delivery, are mechanical. Yet, in their perfection, they only present the complement of a physiologic process, under central guidance and control. The wonder and beauty of this mechanism is beyond our comprehension, and yet their grasp is most essential to the safety of the patient.

Accidents from trauma occurring in the course of labor are of two kinds. First, the unavoidable ones, due to disproportion between the maternal outlet and the passenger. For instance, in a primipara, with nothing unusual in the labor, or conditions surrounding the patient; with the parts well in view, and a protective hand against the outlet, the final pain, expelling the presenting head, ruptured the perinaeum with the anal sphincter as well. An immediate repair picking up the several sphincter ends, and uniting them, gave good result. This was surgery. Again, in a primipara, loaded with sugar, and in the presence of convulsions, under ether, forceps were applied rather high, and, in the course of a careful delivery, the friable muscular structures gave like "pie crust," severing the sphincter and half way up the posterior wall.

An immediate repair in this case did not give good result, conditions of both patient and environment being unfavorable; but after some months, when the babe was weaned, an Emmet repair restored the sphincter and gave comfort through subsequent confinement. In every case an immediate repair should be done; thus each time perfecting the toilet and technique and also the operative skill of the surgeon.

Pregnancy and its progress, from conception until closure of the cycle, when the height of the contractile wave has been reached and the uterine musculature will no longer tolerate its guest, presents in one, the three foci that always appeal to the surgical conscience, viz: of pain, of possible infection and

also of possible disaster from pressure or from rupture with hemorrhage.

The chief advances in our profession today are along two distinctive lines. First, the early recognition of foci, of either infective or mechanical menace, and second, the perfection of toilet and technique that permits us to attack these foci at about any anatomic point with a minimum risk. Thus have many collective groups of symptoms with a definite focus of origin come rightfully into the realm of surgery; meaning an approach to the idealism that gets us beyond the ignorant chains of symptomatology alone. Now, any man knows that a woman has a baby, but how many have given this function, the most important of them all, with two lives at stake—always serious and forceful thought, to a realization of just why, and where, and when? Therefore, it is the why, and the where, and the when, that brings this function and its product for safe accomplishment into the realm of surgery.

The chief dangers in obstetrics are from trauma and infection, and the safeguarding and prevention of these dangers are surely by surgical means. The trauma may be done by either a "Vis a tergo" or a "Vis a fronte," and it is the surgical conscience, and the surgical judgment in the selection and application of aids to delivery that will prevent or minimize such accidents. Forceful, rapid dilatation, podalic version, forceps and Caesarian section have each a legitimate place in obstetric service, but with a thought always of the sensitive mechanism with its expulsive forces assured and also of the delicate structures involved, the surgical wisdom and the surgical judgment should guide the accoucher.

Forceful Rapid Dilatation, in some emergencies, with the head well down, the structures soft and yielding, and the outlet ample, is a safe and helpful procedure, but remember, it must be done with a clean hand, and a gentle, and skillful one.

Podalic Version, at any time, and under any conditions, involves much unavoidable Trauma, to both Uterus and

Foetus, and is a major procedure. In the hands of Potter, whom I know personally, and admire, with his perfected toilet and technique, together with the acquired skill of constant adoption; the turning may be comparatively safe, but in the service of the general practitioner, the man who does most of the Obstetrics, it is not.

Forceps, are "life savers," but they are used too often: forgetting their unavoidable Trauma to both the foetal head, and the soft structures of the maternal outlet. Forceps, used as "time savers," are nothing short of criminal.

Caesarian Section, is one of the most simple operations in Surgery, and THE MOST SPECTACULAR!—and it is this that is the cause of its too frequent use, by enthusiastic men, who have been taught Technique, but have not been taught judgment; obstetric judgment, and the only kind that makes a consultant, or any operative procedure, safe in Obstetrics. Forgive me, but this is because of my love for Surgery, and my love for its high Ideals.

Therefore, while trauma at times is inevitable, infection is not. The fact that a man is in ignorance of or is indifferent to the perfected surgical toilet and technique of today, and its life-saving value in obstetric service does not relieve him of moral responsibility in the matter. Every feature in the process of the expulsion of the foetus creates an inviting and receptive soil for infection; and invasion of cellular structures, through even a slight abrasion or break in mucus surface, with all of its disastrous results, is just as inevitable as the infection that comes in the wake of extensive lacerations.

Therefore, the toilet and technique of a delivery, in the preparation of both attendant and patient, should be just as carefully observed as the toilet and technique of an abdominal operation, this meaning that the attendant and patient should be surgically clean.

In this connection, and finally, just one point should be emphasized. The obstetrician, conditions about the patient and the material outlet are the factors, the forces and the parts involved in la-

bor. Rectal examinations and rectal manipulations, of any kind in the course of labor, are an unwarranted insult, being not only a menace to the toilet of the delivery, but a shock to native modesty as well. What real surgeon or obstetrician would put his hand into a sewer just before beginning an operation or just before delivering a woman?

The fact that this is taught in text books or by authors in prominent journals does not make it safe or true, but only emphasizes the need for a realization of my plea—that obstetrics is surgery.

SOME MEDICAL PROPHECIES.

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Coming events cast their shadows before them and from a study of conditions of today and yesterday, prophecies of the future can be made. A careful review of medical conditions and their results for the past twenty-five years has caused me to feel that certain changes are due to come in the next generation of medicine.

Medical men are beginning to inquire into conditions, social as well as medical, and to satisfy themselves about certain things, or to have them so changed as to make them better for all concerned.

In the first place, I believe there will be in the near future, a broader system of teaching in our great medical schools. At present, most of our teachers are specialists, many of them men who have gone directly from the college into their specialties, with no training in general medicine. I submit the statement that, according to their advantages, and I am almost persuaded to state, that in spite of advantages, the medical professors of twenty-five years ago, were better teachers than are those of today; because they were all men of great general experience before they became specialists, and consequently had broader conceptions of medicine than the specialist can possibly have without this general

training. Consequently our young men fail to get a broad general conception of medicine in our medical colleges of today.

Again, I think that in the near future more attention will be given by our teachers to symptoms and their importance—more particularly those of the early stages of disease. Today, so much time is given to laboratory and mechanical means of diagnosis, that there is little left for the actual study of the patient, and the young physician graduated today, who locates in a remote section far away from the laboratory and means of mechanical diagnosis often finds himself at a loss because he hasn't been trained sufficiently to understand the plainer subjective and objective symptoms.

Then, too, the general practitioner is beginning to ask why the specialist and the group men should be paid so well, and he so poorly, if at all. And surely, there is little justice in it. Were all specialists men who had had proper training in their special branches, there might be some reason for this difference; but we know that many of them are those who have taken possibly only six months, or at most, a year, and bloomed out into specialists. It is this class that the general medical man is after. I submit as a fair proposition that it requires more training, more skill and certainly more labor, time and nerve force for a general practitioner to pull a patient through an attack of pneumonia, typhoid fever or influenza, than for the specialist to remove a tonsil or an appendix. And yet there is no comparison in the fees.

The profession is being so rapidly filled with specialists and groups of specialists, that the time has come when the general practitioner has little to do but stand with his back to the wall and advise his patient which specialist or which group to consult. Of course, the people are largely to blame for this. They will go to some specialist who knows not half as much about anything as their own family physician, and pay him an enormous fee for some trivial operation and come away satisfied,

when they would count themselves robbed should their own doctor do the work and charge one-half the amount.

But I prophesy that in the near future the family physician will come into his own. He will prepare himself better and take advantage of certain opportunities that he alone has for the study and treatment of disease, and that no one can have but him, as I shall attempt to prove in the next few paragraphs.

Sir James McKenzie divides under the following four heads:

The four stages of disease:

1st—*The Predisposing Stage.* The stage when the individual is free from disease, but is liable to be attacked, either from some inherent weakness or from some outside source.

2nd—*The Early Stage.* When the disease has entered the system but has not produced any perceptible alteration of the tissue; when the signs produced are mainly subjective—this is the curable stage.

3rd—*The Advanced Stage.* When the disease has caused destruction or modification of the tissue and its presence is manifested by a physical sign; and

4th—*The Final Stage.* When the patient has died, and the tissues are subjected to post mortem examination.

At present, by far the greatest stress is laid by our teachers on the instruction of the student in the study of the last two stages—the advanced and the post mortem. I believe that the doctor of the next generation will give more time to the study of the two earlier stages—the stages of prevention and cure of disease.

Success along these two lines can be accomplished only by teachers with the broadest conception of medicine. Specialists as teachers can never do this.

To achieve this, it is necessary to recognize disease and understand all the phases of its life history. It is therefore evident that only one class of physicians has the opportunity of acquiring this knowledge—the general practitioner.

His opportunities as family physician

have enabled him to become acquainted with the lives of a number of people through seeing them before disease attacks them and watching them through the whole course of its development. He is the only individual who has the opportunity of finding out the significance of various signs, a knowledge which is absolutely essential to the investigation of disease as well as to the rational practice of medicine. His opportunities give him a far wider outlook upon disease than any other members of the profession, however experienced in the special branches. If conditions which predispose to or provoke disease are to be recognized, the investigator must have the opportunity of seeing the circumstances which led up to the invasion of the disease. It is manifest that neither the hospital physician or the laboratory worker has this opportunity. The early stages of disease are manifested mainly by subjective sensations. The patient becoming conscious that something is wrong with him does not consult the hospital physician during the early stages of his disease but goes to his family physician.

Complete understanding of the symptoms of a disease is not limited to a detection of that symptom and its mechanism but necessitates a knowledge of the bearing of its cause on the patient's future. In other words the investigator must be able to assess the value of the symptoms. To obtain this knowledge he must have opportunity of watching the patient for long periods. This the hospital and laboratory physician cannot do, nor can anyone else except the general practitioner.

With a full understanding of the facts set forth, I believe that the future doctor will devote more time and care to the patient who consults him for some apparently trivial complaint; and thoroughly investigate these earlier symptoms in order to correct certain troubles before they reach the second stage of disease. Too often these patients are dismissed with a casual glance, a few commonplace questions and a carelessly written prescription, only to have them return after a time with some disease

which has progressed often beyond repair, or the careless physician finds much to his chagrin that the patient has consulted someone else.

Too often in my intercourse with people throughout my State, I have inquired of some layman as to the qualifications of some medical man and had the reply that "Dr. A. is a splendid physician if you can ever get him interested, but he doesn't take any interest in you until you are half dead." It would be well here to call the attention of the younger men of the profession to the fact that the most successful practitioner from any viewpoint, is he who takes most interest in his patients. Every patient who consults his physician is either sick or thinks he is, and the surest way to blunder in diagnosis as well as to lose your patient is to show a lack of interest in his case.

There are two other classes of patients that I believe the future physician will take more interest in, and those are the chronics and so-called neurasthenics. Realizing that while little can be done for most chronic diseases, much can be done for the patient in the way of interest and sympathy, if nothing more.

Neurasthenia is a term used in many instances to "cover a multitude of sins" as well as a lot of ignorance on the part of the doctor. Any patient who consults his physician with a line of nervous symptoms is usually dismissed with the diagnosis of neurasthenia, and plainly shown that the doctor is not interested in him and doesn't care to see him again. I feel that the better trained doctor of the next generation will realize the fact that so-called neurasthenia is a disease based on some cause, and will endeavor to find that cause and institute the remedy; and also that he will realize the fact that the chiropractors, osteopaths, and other "paths" are reaping rich harvests every day from the neurasthenics and chronics that are being daily turned away from the regular doctor's office by the lack of interest shown them.

So long as we have had any history of medicine, the doctor has taken care

of the sick poor. They have always done this and done so without complaint. People have quietly sat by and let them do so without much thought of sharing the responsibility. It is a well known fact that the average physician collects only one-half of his bills. I believe the time is coming when the people will wake up to the unfairness of it and rise to his assistance by sharing in this burden. I feel that in a few more years we shall see our counties issuing bonds to build and maintain municipal hospitals, where the poor can be treated by their own family physicians, and the doctor paid out of the funds collected and kept for the same. At present, should such hospitals be provided, of course the physician who put the indigent patient there for treatment would be expected to give his services if the county or city provided the other expense, but I believe the people will come to see the injustice of this. Why should the doctor give his time and service without remuneration when everyone else connected with such an institution is fully and adequately paid?

It has long been known that there exists a great deal of jealousy and envy in the medical profession. There is little of friendliness and good will among them, and in many instances a lack of confidence and trust. This, to my certain knowledge, is passing away, and I feel sure that the younger men are responsible for its going and that the next generation will fully realize that we must have the hearty good will and support of each other in order to do the best work and make our profession stand for what it really is.

Finally, let me say that I believe the coming doctor will be a better business man than the doctor of today and yesterday. By this I don't mean that he will commercialize medicine, or that he will ever turn a deaf ear to the call of the poor who need his services. God forbid that that time should ever come.

The experience of all medical men has been that it is not through the poor that he loses most, but from the fellow who is the habitual doctor's beat, who pays all his other bills probably, and

leaves the doctor's to the last, if he pays him at all. I believe that the coming doctor will realize that he is due a proper remuneration for his services from the class of people who are able to pay or refuse them his services. It is his duty to himself and his family to provide a comfortable living and to lay aside a competence against the day when the practice has outgrown him, when he shall have become a back number (just as all of us will become if we live long enough), when the time shall come when he is unable to work. Let me say to the young men here tonight: look out for your collections; collect your bills when they are small. Many a patient can pay you \$5.00 or \$10.00 who, should you let him owe you \$100.00, not only could not pay it but would not try to, and curse you for what you have done. Remember, too, that the surest way to lose a patient and make an enemy is to let him get in debt to you.

For the last three years, my work has taken me into all parts of North Carolina and in contact with most of her physicians; I have come to know several physicians who have grown old in the work, who gave their best days to their patients, serving them faithfully without thought of reward. Attending all alike, the rich and poor, exacting nothing, receiving only such compensation as their patients saw fit to pay; these men are now unable to work and are spending their last days in poverty, some of them suffering for the actual necessities of life; and after all their sacrifice and service, in scriptural language "No man gives unto them."

A story was told at a recent meeting of the North Carolina State Medical Society by Dr. R. H. Lewis of Raleigh, of a physician who practiced in one of our small southern towns. He was one who never refused a call, and paid no attention to his collections; went to everyone who sent for him and gave them the best he had. The town outgrew him and the lot whereon his little office stood was sold and a handsome tall building was erected there. He was old then and too poor to rent an office in that building, so he took two rooms over a

livery stable; got a board and had his name "Dr. William Riley—His office is upstairs" printed on it and put at the bottom of the steps. Here he treated such patients as came to him, though they were few then. One cold sleety night he went to see a patient; being poorly clad he got wet and took pneumonia. After awhile he began to be missed and when his door was opened, he was found dead in his bed. By his side lay a little account book and a stub of a pencil, and opposite each account in that book, written in a trembling hand, were the words: "Paid in full."

Well, they buried Dr. Riley and on the way back from the cemetery the question arose about putting a monument to his grave. His patients were poor, all the wealthier ones having left him when his days of usefulness were done. (Just as they will leave you and me when we reach that time of life.) None of them had anything, so one of them went and got the old doctor's sign and nailed it to a stake at the head of his grave—"Dr. William Riley—His office is upstairs." This is a beautiful story, beautiful because it is true; more beautiful because of the number of Dr. Riley's all over Virginia and North Carolina today, but to me there is more pathetic than beauty, for had Dr. Riley required those who were able to do so, to compensate him for his labors, he could still have attended the poor, have had his office on the ground floor here and also "upstairs" in the hereafter.

RADIUM IN GYNECOLOGY.

Ivan Proctor. M.D., Raleigh, N. C.

Radium plays its greatest part in the treatment of gynecological conditions. It should in no way compete with surgery because it has a distinct and separate place of its own. In many pelvic lesion radium is contra-indicated but in others it yields ideal results. Radium had better be used by the surgeon who has studied radiology and knows its action than by the Röntgenologist. It

is a powerful and at times destructive agent and Radium patients require the same careful judgment and attention as do other surgical patients.

Radium produces its most satisfactory and pleasing results in non-malignant uterine hemorrhages. In menorrhagia and metrorrhagia due to simple idiopathic endometritis and metritis with normal or moderately enlarged uteri that bleed several times during the month or from 10 to 20 days at each period. These women should be grouped and treated somewhat according to their age. Those under 35 years without an established family must necessarily be treated conservatively in order to preserve the Graafian Follicles and menstrual function. Women over 35 years with families or approaching the menopause usually get perfect results. The first group sometimes require a second treatment but are greatly benefited by the first application. The second group are scrutinized particularly as to the possibility of malignancy and a diagnostic curettage is routinely done just prior to inserting the radium. A pleasing part of this treatment to the patient, is the fact, that a hypodermic of morphine and scopolamine suffices as an anesthetic. Especially is this true in multiparous women; and in others nitrous oxide may be used.

Hemorrhages due to small fibroids can be treated successfully in women over 35 years of age in which it is not important to preserve the menstrual function. If sterility must be guarded against myomectomy is by far the safest procedure. In suitable cases not only is the hemorrhage checked but the fibroids go through retrogressive changes.

Radium cannot be used if there is any associated pelvic inflammatory disease. Nor is it advisable in fibroids larger than a three or four months pregnancy. On the other hand patients with large fibroids who have bled until the hemoglobin is below 40 per cent should be radiated before operation, in order to stop the hemorrhage and build up the general condition in an effort to reduce the risk of hysterectomy.

In cancer of the fundus uteri radium is rarely indicated, the disease is so easily and completely removed by hysterectomy that it should be left almost entirely within the realm of surgery.

Cancer of the cervix on the other hand is no longer mainly in the surgical field—it is being treated more effectively by radium. Clark (John G.) says that all border line cases should be treated with radium rather than operation. He does not believe in combining radium and surgery in these cases. The patients must be classified into those requiring radium and those requiring surgery. In beginning cancer or precancerous cervixes, radium in proper dosage will eradicate the condition without the dangers and discomforts of a hazardous operation. Howard Kelly has said that when we can say definitely that a cervix is cancerous, time for operative interference has passed. And who of us today in a suspicious cancer of the cervix would be so bold as to remove a specimen for microscopic examination? It is too dangerous. These patients must have their treatment with the least amount of local disturbance and trauma. If a section is to be removed they must have a radical pan-hysterectomy at the same time. More rational treatment is the proper initial dosage of radium which is probably more efficient and does not subject the patient to a 5, 10 or 15 per cent mortality risk.

When the entire cervix is involved or there is the slightest amount of fixation, radium alone should be used. If it is used pre-operative in this type of case the field of operation is so devitalized that the hemorrhage is greater and toxemia and sepsis are more likely. If used post operative it cannot be used in strong enough dosage to destroy the cancer cells and not destroy the adjacent organs. There is a class of case between the pre cancerous one and the one with more extensive involvement of the cervix that may be operated but it is hard to foretell the extent of the disease and if there is danger of cutting into cancerous tissue it is better to ra-

diate. Clark says if there is a question between radition and operation—the answer is radiation. All so called inoperable cancers of the cervix that are not on the verge of death should be radiated to make life worth living. It will relieve a great deal of the pain, foul odor, and discharge. A number of these inoperable cases have been practically brought back to life, they are living among the five year cures.

The great draw back to surgery in cancer of the cervix is that the operation must be extensive enough to remove all diseased tissue. This requires a great deal of dissecting and a prolonged anesthesia. Prolonged anesthesia itself seems to lower the resistance to cancer invasion even when there has not been a great deal of shock or operating. The Wertheim technique is the only chance for surgical cure in definite carcinoma of the cervix and there are comparatively few surgeons capable of performing this operatton. In the hands of the most expert it carries a mortality of 18 per cent. These two established facts leave us very little to offer the patient from a surgical point of view.

Cancer of the vagina which does not respond well to surgery on account of the extensive distribution of lymphatics has been treated more successfully with radium. The same may be said of cancer of the vulva.

Radium for cervical leucorrhea has not given uniformly good results, but in certain selected cases the condition has been greatly improved.

Radium should not be used in patients who have complicating surgical conditions such as appendicitis, gastric ulcer, cholelithiasis, etc. But it should replace surgery in large fibroids complicated by diabetes, heart or kidney disease.

Cancer of the breast should not be operated without preliminary radiation. There should be surface applications (50 miligrams for two hours) to the square inch around the tumor in order to block the lymphatics. The line of incision should be rayed after removal of the

breast which is best done with a cautery. X-ray is a great adjunct in the treatment of cancer of the breast.

Candidates for radium therapy should be tested for the kidney function and have blood examination including hemoglobin, erythrocyte and leucocyte counts. A low hemoglobin (60 per cent) and red blood cell count requires a reduction in the dose of radium. Leukopenia often contra indicates the use of radium until there is general improvement in health. Excessive nitrogen retention in the blood usually requires improvement before radium therapy can be used.

Malignant conditions require their heaviest dose at the initial treatment. After the second treatment cancer cells become resistant. Repeated raying probably does more harm than good.

Warnekros expresses the value of radium therapy when he states that he observed a recurrence in 18 per cent of cases of cancer radiated following operation, while 55 per cent recurrence when radium was not used. Kufferberg says results were more permanent in cases in which radiation of the cancer was employed alone than in cases in which a radical operation was followed by post operative radiation.

In conclusion radium therapy offers good results and must always be considered in the treatment of uterine hemorrhage (menorrhagia and metrorrhagia) not due to cancer, large fibroids, retained secundines or periuterine inflammation. In intra mural and submucous fibroids not larger than three or four months pregnancy. In large fibroids in which cardio renal complications prevent surgery. In cancer of cervix, vagina, and vulva. In selected cases of cervical leucorrhea. In cancer of the breast.

1. J. G. Clark and F. E. Keene, A. M. A. J., Aug. 12, 1922.

2. Garrett, B. C., New Orleans Med. J., Oct. 1922.

3. J. J. Stacy, Am. J. Rontgenology 9:658 Oct. 1922.

4. Heiuz, Kufferberg, Strahlen Therapie 13:88, Berlin 15, 1921.

THE IMPORTANCE OF SOCIAL SERVICE IN HOSPITAL ADMINISTRATION.*

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I have been asked to speak of the importance of social service in hospital administration. Let us consider what a modern hospital is,—what it does and what it stands for. Many changes have taken place in hospital and dispensary practice. No longer may hospitals bring into their wards patients of whose daily environment they have no knowledge,—spend infinite skill, time and money on their treatment during the acute stages of the disease,—then discharge them as "well" when only in the convalescent stage,—to return to homes of the poorest type, with no further sense of responsibility either to the patient or to the community. It is through social service that such waste is prevented.

May I pause a minute here and tell you the story of Ida:—A child of three when brought to the Johns Hopkins hospital. She had a stricture of the trachea following diphtheria. Tracheotomy was done. She cannot stand dilatation now and must wear a tracheotomy tube. If we can keep her in good, general-physical condition for one, maybe two years, maybe longer, it is hoped that the throat can be dilated and the tube removed. The hospital kept Ida for eighteen months. She lived in the country quite a distance from the city, her home conditions are deplorable, she is a ward of the Maryland Children's Aid Society. The doctors and nurses had become greatly attached to her, and were confident that she could not live outside the hospital. The Chief of Staff was unwilling to have her continue to occupy a bed in the hospital that might be used for a more hopeful case, and ordered her discharge. Social service was asked to find a suitable home for her

*Read before the North Carolina Hospital Association, Asheville, N. C., April 16, 1923.

within three blocks of the hospital. After visiting thirty houses, we found a woman who was intelligent and willing to assume the responsibility of her care. The Maryland Children's Aid Society pays the child's board,—the social service keeps close supervision. She is coming regularly to the clinic for observation. Now, at the end of eighteen months, she is doing better than when in the hospital.

The conception of the hospital's relation to the community has changed greatly in recent years. We are living in a period in which the searchlight of inquiry is turned on all activities. "Man's work is judged by the results achieved,—and the test of efficiency in a hospital is the number of individuals turned back into society as economic assets" as Dr. C. McFee Campbell has so well expressed it,—“The function of the hospital is now recognized as being not merely to take in for treatment and to give ambulatory advice to individual patients,—but to be a public health center of the community, and a center for collecting data and suggesting measures with regard to the prevention of disease. The physician in the hospital and dispensary is only doing justice to his task if he takes into consideration,—not the individual organ or system of the patient,—but the patient himself.”

Janet Thornton brings out the idea very forcefully in a paper she read at one of the meetings of The American Association of Hospital Social Workers. She speaks of the three fundamental thoughts that should be foremost when we are considering the function of the hospital or dispensary:—First, “that hospitals and dispensaries exist for the sake of the health of human beings. Whatever emphasis may fall on particular aspects of their work,—such as teaching, research, general and special practice,—their great and ultimate purpose is the care of the community's health.”

Second, “that health is a common interest of all. Typhus fever in Poland is our menace as well as to the Poles. Tuberculosis is passed from servant to master. The breakdown of the family of the injured or exploited worker becomes the burden (and shame) of the community. Care of the community's health means care of all the members.”

Third, “That the care of health is a cooperative endeavor. It is neither the privilege of the wealthy, nor the beneficent gift of the wealthy to the poor. It is rather the prime interest of all that it becomes the possession by right of all.”

Miss Thornton shows that there is of necessity some overlapping into social problems in all hospital activities that touch the management of patients. “In registration and classification social and identifying data must be secured. In taking medical histories the personal history of the patient must be touched upon.”

She concludes, “that as a considerable part of the practice of medicine has to do with the personal and social life of the patient,—much of it with the intimate, often humdrum, affairs of everyday life, it is, therefore, right and proper to say that the practice of medicine is to a considerable extent social service.”

“Social, as well as medical, record is kept of each case so that the physician has complete data at hand when summing up for diagnosis and treatment. It is the task of the specialist in social work, collaborating with the physician, to correlate medical plan with the circumstances of the patient's life and make necessary social adjustment.”

A case illustrating this point is that of a boy 8 1-2 years of age, for eight years the only child of well-to-do parents. He was diagnosed in infancy as having “heart trouble.” He had been out of school one year, sleeping with the aid of capsules every night.

The mother was ailing, and both parents were anxious and nervous. This led to disagreements between them.

The family has spent a large sum of

*Hospital Social Service,” Vol. LV., Nov., 1921, No. 5. “Relation of Hospital Social Service to Other Hospital Services.”

money on private physicians without relief. Almost in despair, they brought the child to the dispensary, where he was found to be physically sound, and was transferred from the children's department to the Henry Phipps Psychiatric Clinic. The doctor assured the parents that the child's condition was entirely due to their nervous reaction and not to any organic disease; it was advised that he be sent away from home, and they were turned over to the social worker to plan for his treatment. The social worker spent hours in making them understand the full significance of the case, but finally gained their confidence and consent to placing the child on a farm under intelligent care,—the parents paying his board. She then had the mother examined, and operated upon for chronic appendicitis. Several months later, the father's work made it necessary for the family to leave Baltimore. They, naturally, wished to take the little boy with them. He had greatly improved, but Dr. R— felt that neither the parents nor the child had gained enough to make it safe for him to return to his old environment, and, after another day and a half with the parents, the social worker induced them to leave him on the farm under her supervision. When seen in the dispensary in December, he had gained 15 pounds, sleeps soundly, has attended school regularly since going to the country. He is keeping up with his class, and has been promoted to a higher grade. The plan now is for him to return home in June, and later he may be sent to a military boarding school if he does not do well.

That the bearing of social conditions on illness and disease was recognized years before there was any organized effort to adjust these conditions as part of the treatment of the patient, is evident from early literature. Richard Wiseman, an eminent English surgeon, wrote in 1686, "While King's Evil (later called scrofula and known to us as tubercular adenitis) was known to be due to 'acid blood' the more direct cause was hard to determine, but could be put under the head of air, diet, exercise,

natural complexion, and inherited tendencies."

It is these same living conditions with which social service is working today.

I recently found a quotation from a hospital report published in 1806, more than a hundred years ago, in which it speaks of the doctors and directors of the hospital providing the dispensary patients with surgical appliances which they could not afford to pay for themselves. Florence Nightingale saw the great truth of social forces in disease, and proclaimed it in her own clear way. It was through her influence that Dr. Blackwell, founder of the New York Infirmary for Women and Children, in 1859 had the patients visited in their homes, instructed in hygiene, supplied with money for food and clothing, and work found for them.

The system of follow-up work with discharged patients was adopted some years before social investigation and adjustment became a recognized part of hospital and dispensary treatment. Follow-up work as after-care of discharged mental cases, was organized in France, by Dr. Fabret, in 1841. Such societies have been in operation in England and Switzerland for years, and now exist all over Europe,—in Australia, Japan, Brazil,—and an international organization is now in the process of formation.

The office of these after-care societies is to find suitable work, provide money, tools, and to advance payment for rent, until the patient has become adjusted to normal environment,—before the hospital feels that it has fulfilled its obligations.

The first social service department as a definite factor in the treatment of patients, was established by Dr. Richard C. Cabot, in the Massachusetts General Hospital in 1905. Dr. Cabot employed a nurse, who had some social experience, to investigate the living conditions of his dispensary patients as an aid to diagnosis and treatment. This was the beginning of hospital social service as we are familiar with today. The development of hospital social service has been a process of evolution

along with the general progress. Certain factors stand out conspicuously in bringing it about,—changes in industrial methods, with the consequent strain and pressure; the growth of cities, and freer use of dispensary and hospital; the emphasis placed upon our emotional and instinctive life in its relationship to health by the psychiatrist.

Perhaps of even greater significance in the development of social work in hospitals is the radical change that medical practice has undergone,—primarily, specializing and cooperation.

Dr. G. Canby Robinson has said, "Specializing has developed because no one man can master the knowledge and technique necessary for all types of modern, medical practice. Cooperation has been inaugurated as the problems for many patients need the combined effort of several specialists for their adequate solution. Specialism and cooperation are the essential elements in the development of the modern hospital, dispensary or group practice.

"These modern developments have had their influence on therapeutics. Specialization has produced an intensive therapeutic attitude which confines treatment to the particular field of the specialist directing it.

"Cooperation, especially within the hospital, has lessened the intimacy of the relationship between physician and patient, and when several doctors are involved in the case of each patient, no one of them has the same personal feeling that he would have if the responsibility were not divided. These factors have brought about a loss to what may be called general therapeutics,—the treatment of the patient as an individual, regardless of his specific disease or injury. There has been a tendency to do less for the particular individual as the ability to do more for the relief of the particular disease has developed. As specific therapeutics has grown, general therapeutics has declined."

Dr. Cabot in speaking of the intense and minute concentration necessary to the skill expected of the specialist says that it is human and justifiable only when someone else (referring to the

social worker) is at hand to care for the patient as a whole. "All specialization," he says, "calls for reintegration to justify and complete it. The division of labor in factories is successful only because it is someone's business to view the whole process of manufacture and sale as a whole and, adjust every part to the needs of the whole."

Dr. Cabot also says, "Three-fifths of the cases presenting themselves at a dispensary for treatment cannot be cured by drugs or surgery. Such amelioration as is possible with our present knowledge usually involves building up the patient's power to resist maladies which have attacked him. To build up this power means hygienic readjustment. It is teaching the patient how to live and making it possible for him to carry out this teaching."

Take the diabetic as an example. Left to himself he cannot be expected to appreciate the importance of diet, or to have the courage to stick to it. While he is in the hospital he is regulated by the nurses and doctors. It is the patient who has not been admitted to the house who is the greatest problem. At The Johns Hopkins Hospital we have a social worker and a dietitian in the metabolic clinic during dispensary hours. The importance of following advice is stressed. The doctor's orders are translated from technical to everyday language,—grammes into spoonfuls or cupfuls,—proteids, carbohydrates, fats, into specific articles of food; a weekly menu is made out, allowing as much variety as is consistent with the prescribed diet. A home visit is made to see that the orders can be carried out, and to impress not only the patient but the other members of the family with the importance of adhering to the diet. If the patient is too poor to procure the necessary diet, a social agency is asked to provide it and told the estimated cost per week. A weekly cooking class is

"Hospital Social Service"—Introduction by Dr. Richard C. Cabot. Proceedings of the National Conference of Charities and Corrections, 37th session, May, 1910.

held in the hospital where the patients learn to prepare their food palatably. If the patient is a man or a child, the wife or mother is asked to come to the cooking class. Instruction in cooking is given in the home to those who cannot attend the class. The patients are encouraged in every possible way and are kept in close touch with.

We are trying to meet our responsibility both through individual case and group work. In the orthopedic department there were registered last year 573 children under the age of 14 years, —317 of this number being new cases during the year; 111 were under the care of outside agencies, the remaining 462 were followed directly by the social worker in the clinic. A home visit was made to each patient. The doctors' orders were interpreted to the mother, her interest was enlisted, and she was made to understand the importance of half-inch elevation on the sole of a shoe, or why a child must wear a brace. The result, as shown by splendid cooperation on the part of the parents and improvement in the children, has been very gratifying. Only about 10 children have been lost track of during the entire year.

A case illustrating the importance of social contact is that of a family that moved to Baltimore from Wilmington about two years ago. During the war the husband made good wages, but like most people he did not save for the future. A baby was born to them just before coming to Baltimore who had club feet and club hands. There was no money for doctors' fees or hospital expenses, and relatives discouraged the mother in having anything done for the baby. However, the baby was brought to our dispensary, by the mother, against the wishes of the father. The father had found work with a car company as extra man, but the income was irregular. Through social service reduced rates were arranged, and the mother was encouraged in the step she had taken, with the result that the baby's hands and feet are now perfect. The mother developed infectious arthritis, and tonsil and adenoid operation

was necessary, as the tonsils were the focus of infection. After a little persuasion, the mother came in for her operation, and her arthritis had cleared up entirely.

An older child has cerebral spastic paralysis. He will come in for an operation when school closes.

The father is making good as dispatcher for the company, has been given a regular job, and the family is saving money. A very friendly feeling between the family and the social worker has been established.

As the result of inadequate classes and lack of proper medical supervision of crippled children found to exist in the schools in Baltimore, we made a survey of all the children of school age attending the orthopedic clinic for two years. In the two classes that had been formed in the school for special training of such children, we found that a number with minor deformities had been admitted, and were keeping out others who should be there. In all, 150 children were examined, the result showing that about one-half the number in each class for crippled children was able to attend regular classes, thus making vacancies for some who had never gone to school because of no facilities for handling them. Even after necessary transfers were made, there remained a waiting list for each class.

No thought has been given to the colored cripples, and we found many not attending school at all.

The survey showed need for at least three new classes for the crippled, including the colored children.

The report was sent to the superintendent of the public schools. The result has been that three new classes have been opened for crippled white children and one for colored children, and busses have been provided to transport them to and from school.

All children registered in the orthopedic clinic who are attending these classes are closely followed, and brought in for monthly observation, and transferred to the regular classes if suitable.

Dr. Cabot has been quoted in reference

to that class of patient who cannot be helped with drugs or surgery. There are many such, for whom cure, not merely amelioration, is being effected through social adjustment.

Within the past twelve months, 350 new cases of children were seen at the Henry Phipps Psychiatric Clinic. (Mention of one of these cases has been made earlier in this paper). They were sent for examination by various agencies and individuals, or their parents brought them of their own accord. Of those in the care of no agency, 62 were referred to the social worker doing reconstruction work with children. The question of home and school adjustment is the one most frequently prominent in the problems presented in children under 16 years of age. Other complaints varied from that of a hypochondriacal boy who had missed two years at school, to acute manifestations, such as, for instance, a child in a series of jealous outbursts, cut up and destroyed several hundred dollars worth of clothing, window curtains and table linen. She was immune from punishment, because the family thought she had "lost her mind." There proved to be only one definitely psychotic patient among those referred, though there were several children who, to all appearances, from the history presented at the clinic, belonged to this group. Eleven children were taken from their homes and placed in a different environment for periods ranging from eight weeks to ten months. One child was permanently removed from the environment that was responsible for his misconduct. Of the other ten children whose change of environment was, or still is, temporary, all but one have either lost all trace of the symptoms for which they were brought to the clinic,—neurotic manifestations, vomiting, bed-wetting, jerking and twitchings, lack of discipline and destructiveness, day-dreaming associated with behavior that could not be distinguished from that of schizophrenia, hypochondriasis, etc.—or they have become so modified as to be negligible. The child in whom no permanent im-

provement has resulted is being followed with anticipation of permanently changing his environment. Of the 51 children adjusted in their own homes, all save one, whose family resorted to a spiritualist, have shown some appreciable modification.

There are other cases in which drugs, surgery, and community adjustment are needed to effect a cure. In the fall of 1921, two little blind boys, ages 8 and 10, were brought to The Johns Hopkins Hospital from the mountains of West Virginia by a relative, who, also, had cataract. The family is very poor. By saving one year the father had acquired \$25, which barely paid their railroad fare. They were examined and found to have complete cataract (unable to distinguish night from day). Being out-of-State patients they were not eligible for free admission to the hospital. The physician who examined them was confident that the sight of one child could be restored by a series of operations at intervals of several weeks. The prognosis of the other child was less hopeful, but there was also a chance that he might be helped. The director of the hospital consented to waive the question of eligibility and admit them as free patients if social service would assume the responsibility of their care between operations. This responsibility was accepted and treatment was started at once. Effort was made to induce West Virginia to pay board for them at the Maryland School for the Blind between operations, but was refused. We then wrote to the Red Cross public health nurse in West Virginia, requesting her to visit the family. It was found that they had no resources whatever. Through the Children's Aid Society a boarding home was found where they stayed between operations, social service paying the board. A kindergarten gave them free tuition where they could be thrown with other children. A volunteer was enlisted to bring them clothing and other necessities were provided by social service. As their eyes began to improve it became evident that they would have to be taught to use

their sight. The interest of the field worker from the Maryland School for the Blind was enlisted; she kindly instructed two volunteers who alternated daily in teaching the children form, color, etc. The result was that one child has normal vision, and has been attending school regularly; the sight of the other has greatly improved, but it was thought best to enter him at the School for the Blind in West Virginia, where he will have the opportunity of education, and the satisfaction of becoming an asset instead of a liability.

In August signs of beginning blindness were observed in a little sister, aged 6. She was brought to The Johns Hopkins Hospital in October, and found to have complete cataract. She has now completed her series of operations, been supplied with glasses, and has returned home with normal vision.

The cronic and infectious diseases, such as tuberculosis and syphilis, always present community problems, for which the hospital has grave responsibility. It is our policy to visit the homes of all these patients, and to have contacts examined, and treated if necessary. Of 71 contacts examined in the tuberculosis clinic, 30 were positive for tuberculosis and 44 negative. Over 200 homes were visited to secure return for chest and throat examination of children whose tonsils and adenoids on removal showed the presence of tubercle bacilli. In several instances open cases of tuberculosis were found. These children will be kept under observation.

The same system of follow-up and examination is employed in the syphilis department.

I have tried to give you the picture of the hospital from the social service aspect, and leave you to draw your own conclusions as to its value to hospital administration. Time does not allow me to enter into many of our activities. In conclusion, the thought that I wish to leave with you is: That hospitals and dispensaries exist for the health of the community; that the care of the community's health means care of all its members; that medical practice has un-

dergone radical changes—the old-time physician with his intimate knowledge of his patient and all that concerns him no longer exists—or at least is passing. Information concernig patients must, therefore, be supplied by social specialists in the hospitals who are part of the diagnostic and therapeutic service, whose training has been such as to enable them to bring to the hospital the social aspects.

PYELITIS.*

By Dr. F. L. Siler, Franklin, N. C.

Pyelitis or inflammation of the mucuous membrane lining the pelvis of the kidney has only in the last decade received the recognition that it justly deserves by the authors of text books in internal medicine.

History.

To show how it was regarded by many of the teachers and writers on diseases of children after many of us were practising medicine, Fisher in 1908 said, "It is a condition rarely met with in practice, but more common with men with stricture and prostatic diseases."

The German work of Pfaunder and Schlossman in the same year gave credit to Escherich, for the discovery of pyelitis in children, and spoke of two varieties, one with bladder symptoms and one without. Kerley, about the same time says, "Pyelitis in infancy is very rare" and devotes one-third of a page to the subject; says he has seen four cases. Koplick in 1910 had seen several cases, but prefers the name cystitis as most of the cases originate from that source. Recently Abt of Chicago said, "it is one of the most frequent causes of obscure febrile conditions in children," while Hare in a recent work on diagnosis stresses the subject and says that in the north the most common cause for a chill, fever and

*Read at the 10th (N. C.) District Medical Society, Waynesville, N. C., April, 1923.

sweat is pus in the pleural cavity and the second most frequent cause is pyelitis; that in the south malaria and empyema both precede pyelitis in frequency. When we watch case after case without a chill before seeing one with that characteristic symptom, we are brought to the conclusion that pyelitis should take a place of prominence in diseases of children, especially, next to those of the gastro-intestinal and the respiratory tracts.

It is not the purpose of this paper to discuss those cases that are secondary to some local condition as stricture of the urethra, enlarged prostate, floating kidney, etc., but where it appears as a primary affection or where secondary to infections in other parts of the body and in pregnancy. The colon bacillus is the infective organism in about 80 per cent of the cases while the staphylococcus, the streptococcus and the gonococcus may be found alone or in combination with the colon bacillus. Whether these bacteria reach the kidney by traveling against the stream of fluid, whether by the lymph channels surrounding the urethra, ureters or by the lymph channels from the intestinal canals to the kidneys and carry these organisms in this way, or whether by the blood stream is a question that has been debated pro and con, but most of the authorities at the present time are inclined to the lymphatics route and the blood. It seems conclusively proven that the kidney can filter out bacteria, as typhoid bacilli are found in the blood and the urine, and Holt quotes Cabot and Crabtree as having conclusively proven this in some cases, and that likely some bacteria are ever present when an opportunity for infection is offered.

The gravid uterus, when it emerges from the pelvis, often causes pressure on the ureter, causing residual urine in the kidney pelvis, but the great majority of cases in children are known as primary cases, where they have no urinary or constitutional symptoms preceding the infections. It seems that the mucous membrane covering the renal papillae, calyces and kidney pelvis is ex-

tremely delicate, and gives the bacteria an easy opportunity to produce infection when there is any lowering of the vitality either constitutionally or locally, and when the numbers of bacteria or their virulency is more than nature can take care of. There is a question whether the lower calyces of the kidneys do not contain residual urine to a slight extent when the body is in the erect posture as they seem to be lower than the opening in the pelvis of the kidney and it is possible that this may assist these delicate structures to become infected. As a large majority of these cases are girls it would seem that the infection takes place in a good number of cases by the peri-urethral and peri ureteral lymphatics, as shown by Thompson of London and Abt of Chicago; but on the other hand many cases come on with intestinal disturbance and many cases are in boys and the lymphatic route leading to the kidney from the intestinal canal has strong support by many of the best observers.

Lesions

The pathological condition shows inflammation of the mucous membrane lining the pelvis of the kidney and often small abscesses form in the papillae which may extend to the deeper structures causing pyelo-nephritis and some nephritis is often found in these cases. But the complete pathological conditions found can better be studied in the standard text books.

Diagnosis

The diagnosis depends on finding the pus bacteria in the urine, which in the primary and uncomplicated cases is a very easy matter if we will take the time and pains of putting a few drops of centrifuged urine on a slide and use the high powered lens of the microscope (not the oil immersion lens). The bacteria will often be found in clumps with many pus cells in the field and if necessary a little dilute acetic-acid may be added to show better the granular structure of the cells, and if you find the bacteria with four to six caudate cells

from the pelvis of the kidney to each field it shall be strong evidence of the case being one of pyelitis and we should make another examination a day or two later, which will often prove the correctness of our conclusions. As during the stage of congestion when the fever is highest, we need not expect much pus just as it would be in rhinitis, pharyngitis or any other inflammation involving a mucous membrane. The urine is usually very acid but often becomes alkaline upon standing a short time. In girl babies we should be sure there is no vulvo vaginitis; the older girls and women should be catheterized. In babies the parts may be carefully sponged and the child permitted to lay on a rubber sheet to get the specimen. The fever often comes on suddenly, sometimes with shivering, sometimes with a chill and sometimes with a convulsion. One very marked suggestive symptom is the disposition to being left entirely alone and not moved or handled in anyway. The fever may be one or two degrees or we may have a temperature of 105 or 106. Even should there be a complicating cystitis, which could be misleading we should remember that the fever from cystitis alone rarely reaches above one degree. In older children there may be pain and tenderness over the region of the kidney, but it is in the secondary or complicated and chronic cases where we have our greatest trouble in making a diagnosis and in cases where the bacilluria is an incident in some other trouble, and the laboratory diagnosis should not be relied on entirely.

Our best internists are sometimes at a loss to see where the primary focus of the infection may be. An inflamed appendix close to a ureter may cause pus, red blood cells and bacteria to appear in the urine and a pus tube against the bladder may show a like condition. In pyelitis we may have retraction of the head stiffness of the muscles in the neck and tubercular meningitis often causes pus and bacteria in the urine and both troubles should be considered. Pyelitis may give rise to endocarditis and still

endo-carditis and pyelitis may be due to an infected tonsil. Pneumonia and influenza may both cause pus and bacteria in the urine which will subside when the former trouble is relieved. But with influenza we sometimes have our hardest problems. The fever may continue of an irregular type, the appetite poor, the tongue coated, a severe cough may harass the patient day and night, there may be some emphysematus air cells, a few moist rales and if the urine is not examined we may be misled by these symptoms and try to justify a diagnosis of pneumonia and then to our astonishment be shown a chamber of urine stained with blood and mixed with pus and realize, whether we admit it or not, that we have been on the wrong track. Pyelitis may be the forerunner of enuresis. Or it may remind the weary sufferer that the days of penance have not passed when gono-coccal pyelitis flares up as the after clap of gonorrhoea. It may show up when the gravid uterus presses the ureter against the rim of the pelvis causing residual urine in the pelvis of the kidney, congestion and infection and the same condition may take place in prolonged and tedious labors, the child staying in one position for hours, when it presses on the ureter again causing residual urine in the pelvis of the kidney and again we may have congestion and infection to be followed during the puerperium with headache malaise, slight fever, excessive perspiration, or we may have the more pronounced symptoms of chill, fever and sweat, while the attending physician has a thrill, sweat and cold feet, and it is well in this case unless there is strong evidence of retained placental tissue or some abrasion to put some urine under the microscope as our first witness as it is certainly less dangerous to catheterize the bladder than it is to traumatize the uterus. That pus and bacteria coming from the kidney may cause irritation and inflammation of the bladder and urethra is conceded by many of our best writers. Dr. Geo. Gilbert Smith of Boston says that "cystitis without an underlying cause is almost

unknown," and mentions as underlying causes pyelitis, pus from an inflamed appendix, pus tube, residual urine in the bladder and ulceration of the mucosa of the bladder in syphilis. This inflammation may be the cause of incontinence of urine in children, it may come on not unlike the functional cases of enuresis and maybe not show up until the child is three or four years old. The increased desire to empty the bladder overcoming the normal resistance that the nerve supply naturally gives, it may first show up at night and later during the day as well. It may come on when the child is at play with its toys or playmates, and its thoughts are entirely occupied when the bladder suddenly resents being imposed upon by the irritating urine and a spurt of urine soils the clothes, the child suddenly stops its play and seeks the consolation of solitude, partly from the fear of punishment and partly from the thought that in some way it is inferior to other children, and yet those who study the psychology of adolescence know that if ever a fellow needs a friend, it is the child that has been made to feel inferior to its companions. Huhner describes many such cases due to local causes. As to what part such infections may play in the sexual neuresthenic and habitual masturbator is a question that will bear discussion.

Dr. Lewis Jacobs, of San Francisco, reports in the Medical Interpreter where inflammation of the veru montanum and seminal vesicles, accompanied by sexual neuresthenia and habitual masturbation from non-specific infection of these sexual organs, but does not venture an opinion as to the source of the infection. Smith says that one-half of the sexual neuresthenics have demonstrable pathological findings in the posterior urethra, veru-montanum and seminal vesicle and that a large per cent of these are of non-specific origin, but fails to state where the infection comes from, but does say, however, that epididymitis is often non-specific or tuberculus, and that it is then due to the colon bacillus in the urine. If septic urine, which in

young people is nearly always from the kidney, can reach the epididymus through the vas then it is certainly logical to expect the seminal vesicle and prostate to be infected through the same source. Huhner, in his work on disorders of the sexual functions says that chronic masturbation is as a rule a real disease and not primarily a nervous trouble, and that these cases can no more be talked out of the habit than you can talk a patient with scabies out of scratching, but says "relieve the pathological condition and the symptoms will stop." He further says that nowhere in the external genitals is the sexual sense so well developed as the female urethra, and also says that acid urine may cause masturbation by its irritant effect on the posterior urethra and quotes Bangs in the following: "That with every irritation in the urethra there is a corresponding irritation in a certain portion of the brain which excites the person to increase sexual desire and leads to masturbation and further increases the hyperesthesia in the deep urethra and thus a vicious circle is established."

Most of us admit that with these cases of sexual neuresthenia that are dreaded by the genito urinary specialist and the phycologist, shunned alike by saint and sinner and possibly the most charitable thing that could be said of these unfortunates would be to borrow a line from Robert Burns when he says, "What's done in part we may compute, we know not what's resisted."

Report of Cases.

-- E. R., a male, age 10 years, seen in Jan., 1921, had had a number of attacks of vomiting, coming on at regular intervals, no special cause could be assigned for this trouble, was treated in the usual way with laxatives, alkalis and dieting, but the attacks came on at the same regular intervals. Urine examined showed pus and motile bacillus resembling the colon bacillus, urine was rendered alkaline with potassium cit., later gave the standard pill of methylin blue co. and later urotropin, urine finally showed no pus or bacteria and at this

time the vomiting stopped and has not recurred

C. E., male, age 30 years, seen in January of this year, had an attack of influenza two weeks previously, when seen the temperature was running from 100 to 102, severe sweats several times a day but no chills; cough was persistent and severe. Some scattered rales but no dullness nor increased bronchial breathing; urine showed plenty of pus and bacteria, and considerable blood at times, was treated for pyelitis, made an uneventful recovery.

T. C., male, first seen in April, 1921, temperature 102, considerable headache and backache, supposed to be a case of influenza. Two days later there was no improvement and when I asked for a specimen of the urine his mother remarked she was glad I was going to examine his kidneys and on further questioning said he had often had feverish attacks, and would go all day without passing any urine and at times this would be followed by frequent urination. The urine had a quantity of pus and bacteria. Two days later patient had a chill, high fever and sweat, same on the next day and on the third, the amount of pus increased, the last urine on the seventh day was a catheterized specimen of about two ounces, which seemed to be about half pus. The patient died in coma on the following morning.

E. D., female, age 20 months; seen July 22, 1922, at my office, weight 19 lbs. Had been previously treated for stomach trouble, appetite very poor, would not eat scarcely anything offered her; physical examination did not disclose anything of importance; was given a tonic but showed no improvement August 4th patient no better, unimproved, no increase in weight, specimen of urine showed plenty of pus and bacteria; father was given prescription for potassium cit. and some slips of red litmus paper, told to push this medicine till fresh urine rendered papers blue. Appetite at once increased. Sept. 25th patient looked a great deal better, gained 3½ pounds. Dec. 24th patient had gain-

ed 3½ pounds more, had a good appetite and playful. Weight was up to the standard of a female of this age. Has remained well since.

P. R., female, age 6 years when first seen. Was called in on account of nocturnal enuresis. This condition had been going on for some time. This trouble was rather irregular, patient would remain well for several weeks and then would have attacks of bed-wetting that would last for some time. The inability to control the urine also came on in the day time. Careful dieting would at times seem to help, to be followed by another attack gradually getting more severe; adenoids were removed without effect, all the usual remedies with dry suppers tried, local conditions were carefully gone over, patient became more and more nervous and parents more and more worried about her condition. Albumen appeared in the urine from time to time, was examined both by myself and others. Some times there would be slight attacks of cystitis or urethritis. Patient at times would be very nervous and on being reproved or scolded would often throw down her books or playthings, go to her room for a cry and become almost unmanageable. Child was found to be a chronic masturbator. Albumen in the urine increased and when the family was informed that there was a possibility of Bright's disease, said that an aunt of hers suffered the same kind of encuresis, the same nervous symptoms and was then in an insane asylum where she later died on account of having Bright's disease. The subject of pyelitis was then being discussed in some of our medical journals and I began to study it from this standpoint. At 10 years of age the girl had a severe case of cystitis, the pain and tenesmus was almost continuous, blood and mucous in the urine, an opiate in suppositories was required to relieve the pain and the bladder irrigated a number of times with warm boric acid solution. Patient gradually recovered from this trouble, but still showed pus and bacteria in the urine, but scarcely any casts.

Despite our many failures and in view

of the fact that each disturbance with the urine followed some indiscretion and diet and offensive movements from the bowels I gave a rather favorable prognosis if the diet I outlined should be strictly adhered to. All meats were withheld, the child fed on cereals, milk and toast, with some fruit juice and later some of the lighter vegetables. Mineral oil was given each night to secure an evacuation of the bowels each day. Urine was rendered alkaline with potassium cit., then the other urinary antiseptics were given in turn and then back to the potassium cit. This was continued for some months till the urine finally showed no pus or bacteria. Patient gained 20 pounds in less than three months. Nervous symptoms subsiding and at the end of the year seemed perfectly well. The family then moved away from our town, but returned for a visit last summer. Her mother reported her in the best of health without any nervous symptoms. The girl had a bright eye and a merry laugh, seemed to be in perfect health, with nothing to recall those unpleasant days of childhood, unless it should be by reading that well known poem of Eugene Field's: "When Willie Wet the Bed."

SOUTHERN MEDICINE AND SURGERY

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CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

"And the Truth Shall Make You Free."

Within the span of time covered by the memory of those now living a vast deal has been accomplished in the prevention of disease and the prolongation of human life. Much of this new knowledge is quite technical and can be fully utilized only by those who give the subject serious and undivided thought,—much of it belongs peculiarly to the medical profession. On the other hand a tremendous amount can be and should be passed on to the public generally.

Preventive medicine is a term used in its broad sense to indicate any thing of whatsoever nature that will prevent sickness. In time of war the purpose of a medical department of the army is to keep men on duty. Every sick man in an army not only cuts down the effective strength of that command by that much but also requires one or more well men to care for the sick one and also adds almost immeasurably to the cost of transportation and supplies. An army cannot withstand sickness. Neither can a community. The medical men of an army find themselves charged with anything and everything that will keep men well and in fighting shape. The efficiency of a medical corps is gauged by the number of men treated, but in inverse ratio. So, in civil life, the moving incentive of every physician should be to prevent sickness rather than "cure" it.

Knowledge now available for use by sanitarians is applicable in the general production of health and prevention of

disease only as the public comprehends its value. What has been learned of hygiene will avail nothing if the people themselves do not make practical application of this knowledge.

Unfortunately ignorance of the possibilities and principles of hygiene is not limited to the so-called illiterate class. Some otherwise well educated persons, in fact experts in their particular field, know relatively little of sanitation or of the structure and functions of the various organs of their own bodies. As a result they often accept fads as facts and vampire cults as scientific bodies. Some even undergo "treatment" that an elementary knowledge of anatomy, physics and physiology would reveal as absurd and fraudulent.

Not in far off California only but in North Carolina, right here among our own kith and kin, are individuals who, because of their seeming intelligence have gained position on school boards who fight vaccination against small pox, who cut off appropriations for public health, who oppose the removal of diseased tonsils, adenoids and infected putrifying teeth from handicapped children. We want to be charitable and say such persons do this solely because of utter (and we must say wilful) ignorance of what they are doing. Be that as it may a wolf in sheep's clothing is a menace just the same. It is just such persons that the quack solicits to further his nefarious ends. In more than one community it has been the leading society lady who has introduced a newly acquired cultist. Being thus introduced he proceeds to sell tickets at \$50.00 in advance which entitle the holder (non-transferable) to twenty-five treatments. In one reported instance an aggressive cultist offered to give to the first 200 who bought tickets a number and the lucky number would be awarded a specified make and style of automobile (one of the best on the market).

Certainly it can be only ignorance that will condone such ridiculous fraud.

There can be no greater field for the advancement of truth and no more effective weapon against preposterous vampire cults than suitable teaching in our schools today. Much learning avail-eth nothing if there is not health and body to utilize it. Our high schools, colleges and universities should more emphatically incorporate in their teaching the fundamental facts regarding health and hygiene. Effort should be made to stimulate an interest in science as it pertains to health and civic betterment. Emphasis on the sanitary aspects of the subjects the student is taking is an admirable means of presenting the practical side of his courses.

When health and hygiene has a place in the required studies of our schools commensurate with its importance, then and then only can we fully utilize the knowledge gained. Scientific minds and leaders of thought may blaze new trails but only as this new knowledge is passed on to those who can utilize it will it be of service to mankind.

A Positive Wassermann.

The Wassermann test is probably one of the very most helpful tricks that has ever been devised to aid in diagnosis. To those who remember as a nightmare the anxious uncertainty that so often came when trying to decide whether after all this patient had syphilis, or had been treated to the point of safety or not—whether this or that late manifestation came from a previous and unrecognized syphilis or not, the simple and relatively dependable Wassermann test stands out as a wonder and we never lose our admiration for it.

By means of it persons with even a modicum of medical knowledge may reach conclusions quickly. Because of it clinical symptoms and clinical history are too often carelessly passed by. Because of it the profession and the people

ignore other important features of diagnosis. Whatever the manifestation of illness, if the Wassermann shows positive, all else is forgotten. Because of it the profession has learned that syphilis is much more commonly the cause of human ills than had been previously recognized.

The Wassermann test is almost uncanny in its results. With all its wonderful good it can also do harm. It can and does make men forget that cardiovascular, neurologic, psychiatric and other disease entities exist independent of syphilis and that persons so affected may have a superimposed syphilitic infection just as likely as those who were perfectly well. Many patients in psychiatric institutions give positive Wassermann tests, but a certain number of them contracted syphilis after psychotic symptoms were manifest. It is quite reasonable to assume that an insipient dementia praecox is more likely than a normal person to put himself in the way of contracting syphilis. A childhood infection, scarlet fever, typhoid, tonsils, teeth or what not may leave scars of rheumatism, endocarditis, etc. A superimposed syphilitic infection gives a positive Wassermann which directs all thought toward antisymphilitic treatment without any consideration of the true cause of the previous condition. Certainly it is patent to all that "606" will not cure a dementia praecox or an infective endocarditis, any more than it will "cure" an amputated foot which may have happened to one whose blood Wassermann shows positive. The plea is not to use the Wassermann less but to use it in connection with rather than to the exclusion of other important means of diagnosis, never forgetting that sick people may also contract syphilis and syphilitics may get sick. A positive Wassermann does not eliminate everything else from consideration.

MEDICINE

Wm. B. Porter, M. D., Dept. Editor.

Pulmonary Tuberculosis.

Somewhere between the attitude of the "tuberculosis expert" to whom all lungs are tuberculosis, active, arrested or latent, and that of the general doctor who recognizes the disease only when it is literally a "consumption," lies the truth.

In the Transactions of the College of Physicians of Philadelphia, for 1923, Dr. Isadore Kaufan, of the Henry Phipps Institute, says some things which should help toward the attainment of this truth.

Emphasis is placed on the time-honored careful history and minute physical examination. All laboratory tests being treated as of secondary importance.

Comparison of the two sides from base to apex, then running the scale in the same direction, marking findings with a skin pencil for checking and record, are some of the fundamentals which are noted because of their frequent neglect. It is so much easier to have an examination of the sputum and by X-ray made and let it go at that. These are helps, not substitutes.

Gynecology and Obstetrics

Robert E. Seibels, M. D., Dept. Editor

The Specialty of Gynecology and Obstetrics.

Frank W. Lynch, San Francisco (Journal A. M. A., Aug. 9, 1924), reviews briefly the present status of gynecology, and prognosticates somewhat as to its future and outlines a proper training for those who will later enter this field. Gynecology, as it exists today, is the offshoot of a confused beginning some seventy years ago. It is a far cry from the gynecologist of the present day to the one of the early eighties, whose horizon was limited largely to the specu-

lum, the sound and the curet. The introduction of anesthesia and the discovery of antiseptics were responsible for most of the change. While the passing years have marked a tremendous advance, it is perfectly evident that he who would successfully treat this field needs no other part of the body on which to focus his present attention. Evaluation of the surgical procedures of the past generation suggests that we have used an imperfect method in developing the field for some of our newer and so-called surgical specialties, or that men took them up too early in their careers. At present, it is the internist who checks the spread of irrational surgical procedures, because he is the one who is called on to treat the surgical misfits. The internist, therefore, is acting as the balance wheel for the surgical specialties. Yet the subject of medicine is increasing in complexity so rapidly that there is reason for selective specialization even in internal medicine, if progress is to continue. Certain it is that internists are not equally interested, or their opinions equally profound, in all the branches of their field. Also, surgery has developed so rapidly that he who attempts to treat the surgical diseases of the entire body must inevitably learn that, in a considerable portion of his work, he has been only a technician. It seems logical to develop in each physician, as far as possible, the point of view and training of both internist and surgeon. Since the field of general medicine is too large to be mastered by any one man, there is need for proper specialization, the foundations of which must be firmly implanted in internal medicine. There are many parts of medicine that form distinctive anatomic or functional sub-divisions. Common sense demands that we develop, in each of these, one type of man who shall be both surgeon and internist, and who shall have the opportunity of studying causal factors, and of presenting the results of treatment. Who but the man with the best understanding of the physiologic and pathologic problems involved should be responsible for the entire treatment? The older specialties

have developed in this general manner. The world has learned that the ophthalmologist, rhinologist and otologist do the surgery of their field better than does the general surgeon. At the same time, these specialists are preeminently physicians. The better trained they are, the closer they are affiliated with the problems of general medicine. Dr. Lynch pleads for specialization in gynecology. The subject is extensive. It logically embraces all the conditions and diseases that are peculiar to women. The female pelvic organs are distinctive in function and in disease. The mental and physical attributes of women are at least as distinct from those of men and children, as those of children are from the adult. There is tremendous opportunity for clinical and laboratory investigation. There is every reason for the development of refinements in operative methods. The surgery is sufficient to keep in constant training the hand of the physician, and to prepare him to meet any abdominal complication. The extent of the medical side of the problem is suggested by the fact that not one in eight of nonpregnant women who feel that they have need to consult a gynecologist requires an operation. Theoretically, gynecology and obstetrics should be taught together, and practiced in combination, especially in the formative stages of the physician's career. There may be difficulties to overcome in arranging the practice, but they are more than offset by the improved point of view that naturally follows. The combination is perfectly feasible for groups or partnerships, or for one who utilizes trained assistants if the work is limited to one hospital. There is every reason for improvement of the point of view, since obstetrics still lags behind, in spite of the tremendous advance of medicine in general. Just now, obstetrics is upset by a strong radical school, which is attempting to change its point of view from physiology to surgery, just as it did in gynecology twenty years ago. What obstetrics needs now is a more conservative companion than general surgery. There is the greatest need of well developed de-

partments in medical schools, in which obstetrics and gynecology are taught as interdigitating parts of one major division. Obstetrics cannot be learned from textbooks, lectures or the manikin, unless supplemented by extensive clinical experience. There is much need for the development in medical schools of combined obstetric and gynecologic departments, under the control of one head. As a prerequisite for such a course, a year's training in medicine is an absolute need. For three years more, the candidate should work in gynecology and obstetrics, passing through clinics, wards, laboratories, maternity and operating room. It is perfectly feasible to arrange a course so that the apprentice attends from 1,500 to 2,000 obstetric cases, and is perfectly conversant with all stages of their complications. In the operating room, he should have had nearly an equal number of cases from which to develop his experience. In addition to this, he should actually perform all the work in 150 or more major gynecologic cases, which are selected to present all types of our more serious problems.

Pediatrics

Frank Howard Richardson, M.D., Dept. Ed.

Scarlet fever remains one of the great menaces to the child. Its immediate mortality and its sequelae in the kidneys and ears make it worthy of our most serious study.

Dr. F. M. Haightaling in the August number of The Ohio State Medical Journal, gives the findings in "An Epidemiological Study of Scarlet Fever Occurring in School Children."

1. Forty-four per cent of cases were not seen by a physician or were not properly diagnosed or proved later to be scarlet fever. 2. Fifteen per cent were directly traceable to chums; 35 per cent to relatives; 11 per cent to school contacts; 3 per cent return cases; 35 per cent undetermined.

In answering the question, shall schools be closed, he says:

"The full time health commission, with one nurse to 1200 and proper co-operation of physicians should find the missing cases. Control relatives and chums, and the schools should continue undisturbed."

Mental and Nervous

James K. Hall, M. D., Dept. Editor

Law and Manners.

In the Atlantic Monthly for July is an article entitled "Law and Manners." It is said to be a verbatim report of a speech made in London several years ago before the Authors' Club by Lord Moulton. At that time he was an old man, and he died in 1921. His career was distinguished by high service to Great Britain—as lawyer, as judge, and, during the Great War, as Minister of Munitions. I read the article once, twice, and again, the third time. And I shall lay it aside, think upon it, and read it yet again. A great truth, like a rain-fall, in order to do good, must sink in slowly. Its incorporation into the body of the individual mind is a slow process. I hope many readers of this journal will secure the July Atlantic and read and think upon the lord's words.

Human action he thinks of as divisible into three great domains. There is, for instance, the region of the Positive Law, in which conduct that must be obeyed is prescribed by law. And there is the domain of Free Choice, in which are included all those actions as to which we claim and enjoy absolute freedom. But between the region of Positive Law and the domain of Absolute Freedom there is a large area in which many acts are performed neither in obedience to prescribed law nor as a response to the feeling of complete freedom. In this large domain Lord Moulton would place Duty, and Public Spirit, and Good Form. All the acts that are performed in this region he thinks of as manifestations of Obedience to the Un-enforceable. What a happy phrase!

And all that domain in which this spirit is the controlling force he would call the Domain of Manners. And "Manners in its broad sense signifies the doing that which you should do although you are not obliged to do it."

The word "Manners" in his happy use of it is bigger than Duty and bigger than Morals, although it includes both. The Land of Manners is a land of freedom of action in which the individual cannot feel, however, that he is altogether free. It includes all right-doing in which there is no force to make one do right but one's self. This happy Land of Manners, delimited on the one side by Positive Law, and on the other side by Absolute Freedom, is being encroached upon now-a-days upon each side. Increasing statutory enactments are constantly making their invasions from the frontier-side of Positive Law. The interpretation of Liberty as meaning license without responsibility is making its encroachment into the Domain of Manners from the side of Absolute Freedom. This latter domain he thinks should remain large. In this field of Free Choice spontaneity, originality, and energy are born. Great movements are born in it. "It covers a precious land where the actions of men are not only such as they choose, but they have a right to claim freedom even from criticism." In this domain of thought are included liberty to marry whom one will, free political thought, religious liberty, and the right to select one's own system of philosophy. But freedom of choice and of action may be abused and made hurtful to the Domain of Manners. Liberty to organize and freedom of debate in governing bodies is destructive in its present tendencies. Acceptance of democracy as meaning the rule of the majority does not imply the surrender of all personal rights. Between "can do" and "may do" there is, and there should remain, a great field. "If I were asked to define tyranny, I should say it was yielding to the lust of governing."

"The great principle of Obedience to the Unenforceable is no mere ideal, but in some form or other it is strong in the hearts of all except the most depraved. If you wish to know how strong, remember the account of the Titanic disaster. The men were gentlemen to the edge of death. "Ladies first." Why was that? Law did not require it. It was merely a piece of good manners in the sense in which I have used the phrase."

An enlargement of this Domain of Manners would tend to hearten those of us who are depressed by the foolishness and the pestiferousness of the multiplicity of statutory laws on the one hand and by the wild and unrestrained recklessness of human conduct on the other side. Salvation, of the individual and of the mass, must spring from within. "I have borne in mind the great motto of William of Wykeham—'Manners makyth Man'." Americans might well memorize that as a text. And we doctors could learn it by heart without hurt.

On the Frequency of Violent Death.

Does it astonish you to read that in the United States more than 2,000 persons died by suicide and homicide every month last year? More than 1,000 persons killed themselves every month in the year 1923 in this country. More than 1,000 people were murdered in the United States every month last year. Death by violence is one of the major causes of death in our country.

What is the matter? Does suicide imply mental unsoundness to the point of irresponsibility at the moment of the self-killing? That is an interesting medical as well as an interesting legal question. Homicide is increasing enormously in the United States. For instance, in 1910 in each average group of 100,000 people 5.9 people were killed; in 1923 in each such average groups 10.2 were killed. It is somewhat surprising to read that the murder rate per 100,000 in New York City for last year was only 5.5 people; and that for Memphis it was 65; for Chicago 12.7; for Phila-

delphia 8.3; for Cincinnati 16.3; for Saint Louis 26.1. What state of mind is all this killing an expression of? Does it imply helpless unrestraint on the part of the murderer; or does it indicate our reckless disregard of life? We have little regard as people for the value of our country's inherent natural resources. We destroy them. Does murder express the same sort of disregard of human life? The general custom of carrying concealed weapons is thought to be a provocative factor lying behind murder. In England and Wales not even policemen carry pistols, and in these countries murder is rare. The theory is advanced, too, that we are still a frontier people in our habits. Killing is common amongst frontier people. In such a civilization the tendency is to settle personal difficulties in a personal manner, without an appeal to the arbitrament of the court room.

In this country last year 12,948 suicides were officially reported as the cause of death. The actual number of suicides in the United States for the year 1923 probably reached 16,000. Why do people kill themselves? Knowledge about this instinctively unnatural act is limited. To desire to continue to live right along is probably universally inherent in all animals. Does suicide imply always mental impairment? Does change in environment alone ever cause suicide? The degree of personal maladjustment leading to suicide must be terrible. Women have gone to killing themselves. Last year in this country 4,316 committed suicide. In the last five years young people—between five and eighteen years—killed themselves in this country to the number of more than 4,000.

These figures are furnished by an interesting editorial article in *The World's Work* for August.

Urology

A. J. Crowell, M. D., Dept. Editor

The Clinical Results With Flumerin in Syphilis.

The histories of ninety-five syphilitic patients treated with flumerin were reviewed by Joseph Earle Moore and Harry Wassermann, Baltimore (Journal A. M. A., Dec. 1, 1923). These have been subdivided into four groups: early syphilis (primary and secondary), thirty-four cases; later syphilis (with tertiary lesions), twenty-nine cases; latent syphilis (Wassermann positive), twenty cases; miscellaneous, twelve cases. This study indicates that flumerin has spirocheticidal properties to an extent not shown by other mercurial drugs; it heals the lesions of early syphilis with a fair degree of constancy and rapidity, and it exerts a powerful effect on the blood Wassermann reaction. The results of flumerin in tertiary syphilis may be summed up in the statement that resolution of lesions was usually accomplished, and that, in some instances, a definite effect on the blood Wassermann test was noted. These results are not as rapidly obtained as with the arsphenamins, but seem equal to or better than, the results from other mercurial drugs. In man, flumerin is well tolerated in dosage of 5 mg. per kilogram given every other day, though an occasional patient will show signs of intolerance from this or smaller amounts. It is therapeutically active in early and late syphilis in doses of not less than 3 mg. per kilogram, given at least as frequently as twice a week. Smaller doses or longer intervals than this markedly impair the efficaciousness of the drug. Animal experimentation has demonstrated that for most mercurial preparations, the minimum single dose required to heal syphilitic lesions equals or exceeds the maximum tolerated dose. By contrast, flumerin produces healing of testicular chancres in the rabbit in single dose of 20 mg. per kilogram, and is tolerated in dosage twice as large. Its

therapeutic ratio is thus 2:1, an index not equaled by any other mercurial. The extremely low toxicity of the drug also permits the introduction of a large percentage of metallic mercury, which is more than three times as great in a given time period as is possible with other comparable mercurial salts, whether soluble or insoluble. Since, in man, saturation with flumerin produces the same signs of intolerance as other mercurials, notably stomatitis and enteritis, and exerts the healing effects detailed on the lesions of syphilis, it is fair to assume that its general pharmacologic action is that of mercury. Its field of usefulness is therefore the same as for other mercurials, with the additional advantage of its higher therapeutic ratio. While it is obvious that flumerin is not the equal of any of the arsphenamin group, and that it cannot replace them, the qualities enumerated for it suggest its place in syphilo-therapy. By virtue of its superior spirocheticidal activity, its major field would seem to be complementary to arsphenamin in the treatment of primary and secondary syphilis.

SURGERY

A. E. Baker, M. D., Dept. Editor

As the science of medicine advances in the same ratio it becomes an exact science based on carefully taken physical history, interpreting symptoms correctly with the assistance of the "modern trinity," microscope, test tube and X-ray.

This abstract of Dr. Walton's paper on "The Differential Diagnosis of the Surgical Dyspepsias" is most helpful in making correct diagnoses when considering dyspepsia symptoms.

"The author deplors the fact that very often in cases of surgical dyspepsia a short-cut to diagnosis is taken. The history and the physical examination are often ignored and an X-ray examination or more rarely, a test meal, is looked upon as the sole means of inves-

tigation. Often a patient is referred with a note that gastric symptoms are present which have not yielded to one or two weeks of medical treatment, and X-ray examination being requested to determine whether an ulcer is present. In such cases a carefully taken history and an examination will often make it evident that the patient has gall stones or appendicitis. The study of a case should include a physical examination, a test meal, an X-ray examination, and most important of all, the history. Next in importance to the history is an X-ray investigation carried out by a skilled roentgenologist.

In the case of a patient over forty years of age who has previously been free from symptoms of dyspepsia and who complains of indigestion present for more than three weeks, carcinoma of the stomach must be considered. If in the case of a woman, the symptoms date back to early childhood, the patient may be suffering from ptosis. The characteristic periodicity noted in the symptoms of a gastric or duodenal ulcer are so distinct from the long continued, constant, slight discomfort of gall-tone dyspepsia that in a typical case there is usually no difficulty. The more acute gastric lesions give rise to pain which, though widespread in the epigastrium, does not as a rule radiate beyond it. In the more chronic gastric conditions the pain radiates widely to the back and shoulders.

In the case of a benign gastric lesion, the time of onset of the pain is directly proportional to the distance of the ulcer from the cardiac orifice. In cases of carcinoma of the stomach, on the other hand, the pain is constant but may be aggravated shortly after the ingestion of food. The discomfort of gall stones is characterized by the fact that it occurs immediately after or even before the meal is finished. In cases of visceroptosis there may be a fullness immediately after meals, but generally the discomfort is more pronounced toward the end of the day and when the patient is tired, and is relieved by the recum-

bent position. Carcinoma of the stomach rarely causes acute pain unless there is obstruction or involvement of some other viscus. Chronic ulceration often gives rise to severe pain which frequently is relieved by pressure on the epigastrium.

Two main types of vomiting may be distinguished. In one, which is due to irritation of the stomach, the quantity of vomitus is small and the vomiting is frequently repeated. In the other, which is due to some form of obstruction, the quantity of vomitus is greater unless the obstruction is high up, the attacks occur at longer intervals, and usually the returned material contains food which was ingested a relatively long time before. Therefore very frequent vomiting of a small quantity of material indicates an acute gastritis such as is more apt to be found with acute ulceration than a chronic ulcer. Lesions which give rise to symptoms of inflammation but are situated outside of the stomach will cause only infrequent vomiting; hence vomiting occurs only occasionally in cases of gall stones and appendicitis.

A duodenal ulcer practically never causes vomiting unless its upper margin involves the stomach, or it has caused obstruction.

The presence or absence of hematemesis and melaena is of very little aid in the differential diagnosis. It is never justifiable to wait for the presence of hematemesis or melaena in order to make a diagnosis of chronic gastric or duodenal ulcer.

Loss of weight is a sign to which much attention is paid unjustifiably. It frequently occurs late and should never be awaited. It is by no means suggestive of carcinoma, since a person with pyloric stenosis, obstruction of the common duct, or chronic pancreatitis may lose weight with startling rapidity.

Jaundice associated with other symptoms of dyspepsia is a definite indication of obstruction of the common bile duct, but a differential diagnosis between stone in the common duct, chronic pan-

creatitis, and pressure upon the duct by an external neoplasm can be made only by taking other symptoms and signs into consideration. The absence of jaundice is not positive evidence that the common duct is free.

The general build of the patient is often suggestive of the lesion from which he is suffering. A young woman with well-marked ptosis habitus is very unlikely to be suffering from a chronic gastric ulcer. A well-developed muscular man complaining of long-continued dyspepsia is much more apt to have an organic lesion of the stomach or duodenum, whereas many stout women past middle life who have had dyspepsia for a number of years are suffering from gall stone.

An investigation of the gastric secretion is a test of very great value, but may give rise to an erroneous impression unless it is combined with a carefully taken history and clinical investigation. Of the two methods, a fractional test meal is of the greater value.

One of the most important aids in the diagnosis of dyspepsia is a careful X-ray investigation, but unfortunately the laity have received the impression that this is the only test and, as a result, persons with a distinct and characteristic history of ulcer or gall stones often refuse operation because the X-ray findings are indefinite or negative. A chronic ulcer on the posterior surface of the stomach may cause no characteristic pit or depression. Carcinoma of the stomach not infrequently gives rise to a very characteristic picture, but occasionally, and especially if the growth is in the fundus of the stomach, the X-ray may entirely fail to reveal it.

Hospital and Sanatorium

John Q. Myers, M.D., Dept. Editor

Psychology of Hospital Service.

Much of the criticism of hospitals is a matter of psychology, pure and simple. That intangible something called "atmosphere" is often the thing upon

which success or failure depends, more than upon equipment or number of personnel. The superintendent who can create and maintain in his hospital a feeling of friendliness and of service is going to find his hospital popular.

The atmosphere of a hospital emanates from the front office. The attitude of the superintendent and the superintendent of nurses will always be reflected in the employees, down to the last and lowest hireling. If a superintendent looks upon patients chiefly as clinical material or sources of income, and the superintendent of nurses considers them animated Chase dolls of troublesome problems, it is a foregone conclusion that internes, nurses, clerks and servants will agree with them and act accordingly. If, on the other hand, the executives inculcate by precept and example the idea that patients and their friends are guests of the institution, the whole atmosphere changes; and the patient may not notice the lack of equipment, may wait more patiently for an answer to his signal, or even overlook mistakes, and go home singing the praises of those who helped him back to health.

Watch the working of the popular hotel. The keynote of the place is service. It is paid service, true, but the public gets its money's worth. Why should not a hospital render satisfactory paid service as well as an institution which is organized primarily for money-making?

Watch the successful shop. It renders service and the public pays. It is popular if the public gets its money's worth in quality, promptness and courtesy. The motto of the good salesman, "The customer is always right," could be used to advantage in hospital life.

Salesmen study psychology. Advertisers study psychology. Why not hospital executives and nurses, who deal with human beings at their most sensitive time? Of what avail is a well-organized office, if a carelesse-mannered clerk or an impatient telephone operator antagonized the patient's friends? To what end is a well-conducted training school if a nurse's discourtesy "riles"

the family, or her tactlessness hurts the patient's feelings? If you cannot succeed in making nine-tenths of your patients satisfied or enthusiastic, you must admit that you and your hospital have failed.

Getting the patient's viewpoint is the key to success. This is not easy, but must be striven for. The Golden Rule is ideal, but is not workable without imagination. It is not easy for an overworked executive or nurse to think how it might feel to lie staring at four walls for twenty-four hours a day. A hurried clerk does not always realize the apprehension of the new patient who has for the past ten weeks been screwing up his courage to enter the hospital door. Only a constant iteration of "How would you like it yourself?" "Do unto others—," constant reminding that all comers are guests, and that courtesy always pays, and above all the example of the executives, can assure us of being able to render satisfactory service to the stranger within our gates.

To summarize: Study the patient's psychology. Provide proper and sufficient equipment. Arrange utilities so as to be accessible. Eliminate noise so far as possible. Provide enough help at the right times. Treat the patient and his friends as your guests. And again, study the patient's psychology.

"HERE'S TO HIM"

Here's to the man whose hand
Is firm when he clasps your own—
Like a grip of steel
That makes you feel
You're not in the world alone.

Here's to the man whose laugh
Puts the somber clouds to rout—
And the man who's fair
And kind and square
To the one that's down and out.

Roentgenology

Robt. H. Lafferty, M.D., Dept. Editor.

Recent meeting of the American Medical association much interest was manifested in the additional report of Drs. Graham, Cole and Copher of St. Louis on the use of Sodium Tetrabromphenol-

phthalein, in the study of the gall bladder by x-ray. From their clinic and from Mayo clinic all told there was reported between 85 and 90 cases examined by this method. And the result of shadowing the gall bladder was satisfactory in most of the cases where the cystic duct was patent. Of course the gall bladder would not show in those cases where there was obstruction and in our experience this has been the type of case in which this will prove of most value. And tho our experience has been limited, we do not find that the information obtained by simply causing the gall bladder to cast a shadow is of sufficient value to warrant our using it routinely tho it is possible that as more cases are studied other information may be obtained of value. Most of the patients complain of a nausea more or less severe following the injection of the salt solution into the veins.

The June issue of the American Journal of Roentgenology presents unusually fine article on "Studies of the Colon" by Drs. R. Walter Mills and H. W. Soper both of St. Louis. The article is profusely illustrated and is a very valuable addition to literature of the colon and an added interest is that Dr. Mills recently died and many of the last Journals contain articles of appreciation of him and his work.

In the April number of the American Journal of Roentgenology appears an article by Witherbee of New York on Roentgenotherapy of Tonsils in which he recommends this method of treatment in the following cases:

1. When an anesthetic or operation is contra-indicated.

2. For patients past middle life when hemorrhage might cause complications due to a mild or severe arteriosclerosis.

3. For patients whose tonsils are embedded in infected tissue in which the operation may cause dissemination of septic emboli into the blood and lymph stream, thus producing lung abscess, septicemia, endocarditis, and so forth.

4. For patients whose adjacent lymphatic structures (not removable by operation) are markedly infected.

5. For patients suffering from chronic cardiac lesions, Bright's disease, diabetes, exophthalmic goiter, chorea, rheumatism, hemophilia, asthma, tuberculosis, status lymphaticus, or any condition which has lowered the general condition.

6. For patients subject to frequent attacks of peritonsillar abscess.

7. For vocalists and public speakers subject to frequent attacks of tonsilitis and pharyngitis.

8. For patients suffering from recurrent attacks of pharyngitis after removal of the tonsils and adenoids.

News Items

REPORT OF BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

Since the publication of the Transactions of the Medical Society of the State of North Carolina, four sessions of the Board of Medical Examiners of the State of North Carolina have been held. A special session was held in Raleigh, September 10th, 1923, at which three applicants received license by endorsement of credentials. The regular mid-winter session of the Board was held in Chapel Hill on November 29th, 1923, at which ten applicants received license by endorsement of credentials. At the regular mid-winter session, only applications for endorsement of credentials are considered; no written examinations being given. Eleven applications were accepted at this session, but one of the applicants died very suddenly on the following morning before the license could be issued and delivered and the Board unanimously voted to refund the fee to the widow of the deceased physician and to remove his name from the list of licentiates. A special session was held April 15, 1924, at which time two applicants were granted licenses through endorsement of credentials.

At the annual session held in Raleigh, June 23rd to 28th, 1924, one

hundred and sixty-six applicants appeared. Of this number, one hundred and forty-one took the written examinations and twenty-five applied for endorsement of credentials. There were fifty-three students taking the written examinations of the first two years in medicine; leaving eighty-eight applicants taking the written examinations for license.

The board held an adjourned session in Raleigh on Monday, July 21st, 1924, to assemble the grades and determine the average grades before the sealed envelopes containing the registration cards were opened, which established the identity of the applicant. As a result of these sessions, one hundred and nine physicians were licensed to practice medicine in North Carolina, including one limited license wherein the territory was restricted.

The young physicians taking the written examinations, as a whole, were possessed of a high order of scholarship and professional training, and average grades ran much higher than in former years. It is significant that the great majority had secured a bachelor's degree in some college preliminary to beginning the study of medicine. To Doctor Oscar Dixon Baxter, High Point, goes the honor of making the highest general average grade of 96 per cent. Doctor Nathan Anthony Womack, Reidsville, took second honor with a general average grade of 96%. The third highest general average grade was 93.5-7 per cent, and was made by Doctor John Warren Henderlite, Raleigh. Sixteen physicians made an average grade above 90 per cent.

One hundred and twenty-eight applicants appeared for license at the various sessions during the past year. Of this number, one hundred and twenty-four were accepted and four rejected. The various lists of physicians receiving licenses follows:

Licensed by Endorsement of Credentials Sept. 10, 1923.

Allen M. Young, Mountrie, Ga.; Certified from Georgia.
Blackshead, Thomas Joseph, Dublin,

Ga.; Certified from Georgia.

Shaw, Lillian Eloise, Charlotte; Certified from National Board.

Licensed by Endorsement of Credentials, November 29th, 1923.

Cater, Clinton Duncan, Perry, Ga.; Certified from Georgia.

Fairbanks, Charlotte, St. Johnsbury, Vt.; Certified from Vermont.

Fox, Albert Cullen, Waynesboro, Va.; Certified from Virginia.

Gambrell, Grover Cleveland, Rutledge, Ga.; Certified from Georgia.

George, John Cecil, Cederville, O.; Certified from Ohio.

Lackey, Marvin Alfonso, Portsmouth, Va.; Certified from Virginia.

Laye, Hal Albert, Wilmington; Certified from Pennsylvania.

Peek, David E., Six Mile, S. C.; Certified from South Carolina.

Royster, Jamse Hunt, Richmond, Va.; Certified U. S. Navy.

Scales, Robert Bass, St. Petersburg, Fla.; Certified from Massachusetts.

Licensed by Endorsement of Credentials, April 15th, 1924.

Andrews, Edward David, Sumter, S. C.; Certified from South Carolina.

Sullivan, Claude Hutcheson, Charlotte; Certified by Georgia.

Licensed by Examination, July 21st, 1924.

Anderson, Richard Speight, Whitakers.

Arrasmith, Thomas Milton, Jr., Hillsboro.

Davenport, Carlton Alderman, Mackeys.

Aycock, Thomas Bayron, Pikeville.

Baxter, Oscar Dixon, High Point.

Bell, Horace Orlando, Wilmington, Va.

Best, Deleon Edward, Warsaw.

Bittinger, Samuel Moffett, Sanitorium.

Black, George William, Mount Holly.

Blakey, Ryland Arwood, Fayetteville.

Blue, Irving H., Carthage.

Bowles, Francis Norman, Chester, Va.

Buckley, Timothy Stephen, Richmond, Va.

Bugg, Charles Richard, Baltimore, Md.

Byerly, Wesley Grimes, Cooleemee.

Cardwell, Edgar Parmele, Wilmington.

Carpenter, Coy Cornelius, Morrisville.

Clarke, Francis Mann, Middleton.

Colvard, George Todd, Jefferson.

Costner, Walter Vance, Lincolnton.

Curtis, Ward Cleveland, Winston-Salem.

Darden, Douglas Beaman, Wilson.

Daughteridge, Arthur Lee, Rocky Mount.

Duncan, Stacy Allen, Dunn.

Erwin, Horatio (Col.), Asheville.

Fields, Daniel Allen, Laurinburg.

Fox, Norman Albright, Guilford College.

Frazier, John Wesley, Jr., Winston-Salem.

Fritz, Hubert Hewitt, Hickory.

Gaskin, Lewis Roy, Mt. Groghan, S. C.

Goley, Willard Coe, Graham.

Goudelock, John Jeffries, Monroe.

Groome, James Gordon, Greensboro.

Grose, Robert Glenn, Harmony.

Groves, Robert B., Lowell.

Harrington, Cary Lanier, Greenville.

Hart, Verling Kersey, Statesville.

Henderlite, John Warren, Raleigh.

Hogans, Sterling Franklin, Charlotte.

Howard, John Richard, Saint Pauls.

Howell, Clewell, Whiteville.

Howell, James Ernest, New York City.

Johnson, Harry Lester, Siler City.

Jones, Robert DuVal, Jr., New Bern.

Jones, Thaddeus Elmore, Kenansville.

Knox, Joseph Clyde, Leland.

Lloyd, Marelius Dalton (col.), Washington.

McCreary, Albert Benjamin, Raleigh.

Malone, Julian Yerkes, Asheville.

Martin, Paul Todd, Salisbury.

Mason, Manly, Atlantic.

Mears, George Augustus, Asheville.

Miner, Allen Alexander, Augusta, Ga.

Moore, Robert Ashe, Philadelphia, Pa.

Morris, George Dillon, Goldsboro.

Noblin, Roy Lee, Stovall.

Parks, Walter Beatty, Huntersville.

Patterson, Fred Marion, Concord.
 Payne, Frank Limer, Raleigh.
 Perry, Archibald Howell, Louisville.
 Perry, Frank Leslie, Louisville.
 Poole, Charles Glenn, Raleigh.
 Ramsay, James Graham, Salisbury.
 Riggins, Hazel McLeod, Matthews.
 Robert, Bennett Watson, Gatesville.
 Robertson, Edwin Mason, Woodsdale.
 Rourk, William Asbury, Jr., Shallotte.
 Satlof, Lee Myer, Columbus, Ga.
 Sharp, Oliver Ledbetter, Greensboro.
 Sherrill, George William (col.), Landis.

Sloan, Allen Barry, Petersburg, Va.
 Spikes, Norman Owen, East Durham.
 Straughan, John William, Siler City.
 Tayloe, John Cotten, Washington.
 Taylor, Erasmus Hervey Evans, Morganton.

Thompson, Clive Allen, Sparta.
 Thupchurch, Coy Tillman, Apex.
 Wannamaker, Edward Jones, Jr., Charlotte.

Warren, Bryan Pope, Blounts Creek.
 West, Bryan Clinton, Kinston.
 White, Francis Willard Moody, Windsor.

White, Thomas Preston, Charlotte.
 Williams, William Norman, Pine Bluff, Ark.

Wilson, Lawrence Addison, Fairmont.
 Womack, Nathan Anthony, Reidsville.

Wright, Orpheus Evans, Winston-Salem.

Yarborough, Frank Ray, Cary.

Granted License Limited to Haywood and Madison Counties.

Atchley, James M. C., Hartford, Tenn.
Licensed by Endorsement of Credentials, July 21st, 1924.

Barkwell, John Holloway, Glenwood, Ga.; Certified from Georgia.

Boylston, Wyatte Clinton, Springfield, S. C.; Certified from South Carolina.

Bradshaw, Thomas Gavin, Windsor, Va.; Certified from Virginia.

Byrd, William George, Raleigh; Certified from Mississippi.

Colson, John Davis, Pageland, S. C.; Certified from South Carolina.

Copeland, Henry Walter, Jackson, Ga.; Certified from Georgia.

Davis, Charles Wilson, St. Sanato-

ium, Md.; Certified from Maryland.

Hening, Thomas Scott, Jefferson, Va.; Certified from Virginia.

Herod, John, Thorold, Ont.; Certified from New York.

Kenfield, Harrie W., Orion, Mich; Certified from Michigan.

Lee, Samuel Engle, Sanatorium, Certified from Georgia.

Northcutt, Eugene E., Newport, Tenn.; Certified from Tennessee.

Parry, Leo DeLance, Charlotte; Certified from Pennsylvania.

Pritchett, Harry Wooding, Whitmell, Va.; Certified from Virginia.

Rucks, Berry Talmadge, Asheland, Ga.; Certified from Georgia.

Steele, William Henry, Jackson, Ga.; Certified from Georgia.

Terrell, John Hudson, Jr., Cannon, Ga.; Certified from Georgia.

Webb, Marcus Lafayette, Nashville, Ga.; Certified from Georgia.

Williams, Louis Laval, Asheville; Certified from U. S. P. H. S.

Williams, Norman Grady, Canon, Ga.; Certified from Georgia.

Wyatt, Hubert Lee, Petersburg, Va.; Certified from Virginia.

Dr. Charles O. Delaney, specialist in Urology, has become a member of the staff of the Lawrence Hospital, announcement of his association being made recently. Dr. Delaney is a physician of wide experience, possessing exceptional training and ability, having engaged in practice for several years.

A graduate in medicine of the Jefferson Medical College, of Philadelphia, class of 1919, a specialist with the Sacramento city hospital for three years, and taking a post graduate course at the University of California in 1920, Dr. Delaney is well equipped for his work. For the past two and one-half years he has engaged in practice at Gastonia.

Dr. DeLaney, who is taking up the work at the hospital recently given up by Dr. W. Calhoun Stirling, who has gone to Washington to make his home, was recently married to Miss Gretchen Fiegenschuh, of Mount Pulaski, Illinois. Dr. and Mrs. DeLaney will make their

home in Winston-Salem, although they have not yet selected their residence.

Drs. Salmons and Garvey, prominent physicians of Elkin, will open a hospital there the first of September or shortly thereafter. While it will be equipped at the beginning with only 12 beds, it will have every modern facility for the treatment of patients. The hospital will be located on the second floor of the Salmons building on the corner of Main and Church streets.

The establishment of the new hospital is an additional indication of the constant progress of Elkin, and the citizens of the town are congratulating the progressive members of the medical profession on their decision to provide adequate means for the treatment of the afflicted in a thoroughly capable manner right at home.

Dr. Henry Yoeman Mott, aged 83, retired physician, who was widely known throughout this county and section, died at his home in Iredell county, three miles from Davidson, after having been in declining health for some time.

Funeral services for Dr. Mott were held at Davidson Presbyterian church. Bishop E. A. Penick officiated.

The following served as pallbearers: Active: Barron Mills, Nathan Mills, Eugene Fink, William Johnson, Surgeon Moss and Carl Thompson; honorary: T. J. Mills, J. R. Withers, Dr. G. W. Taylor, Dr. W. D. McCausland, Lee Morrison, J. A. White, C. P. McNeely and W. B. Barnett.

Born June 1, 1941, at Flat Rock, Henry Yoeman Mott was a son of an Episcopal minister and his wife, Rev. and Mrs. T. S. W. Mott. Dr. Mott's father, who was a member of a prominent Canadian family, and came to the south many years ago, was the founder of the old St. John's Church-in-the-Wilderness at Flat Rock and of the Episcopal church at Valle Crucis.

Henry Yeoman Mott, then a young man of 20 years, entered the Confederate army as a cavalry private at the outbreak of the civil war. He was known

as a gallant and courageous soldier, serving throughout the entire four years of the war. He is said to have declined a commission as captain during the war, carrying his commission in his pocket and serving in the cavalry ranks as a soldier instead of an officer. For a while, he was aide to General D. H. Hill.

Just after the war, Dr. Mott married Miss Roxana Smith, of Lincoln county, who died about 15 months ago. His wife was a member of a prominent family of Lincoln county. Her father was the director of the Little-Mountain Iron works of the Confederate unit during the war.

Dr. Mott attended Jefferson Medical college, in Philadelphia, after the war. His two older brothers had been graduated from this institution. After his graduation, Dr. Mott returned to his home to take up the practice of medicine. He became one of the outstanding physicians of this section. His practice extended over Lincoln and Iredell counties and over part of northern Mecklenburg.

Dr. Mott was one of three brothers, all of whom became physicians, and all of whom lived to the age of 83 years. The eldest brother, Dr. J. J. Mott, of Statesville, died four or five years ago, and the second brother, Dr. Wallace B. Mott, of near Davidson, died two years ago. Dr. Henry Y. Mott lived on his plantation near Davidson.

Surviving Dr. Mott are one son and three daughters. The sons, Harry Yoeman Mott, is youngest of the children, and lives at the family home near Davidson. The daughters who survive are Mrs. John B. Alexander, of Charlotte; Mrs. W. C. Mebane, of Wilmington, and Mrs. John James, of Charlotte. One son and one daughter of Dr. Mott are dead. T. S. W. Mott died in 1898 and Mrs. J. R. Anderson died in 1910.

Dr. and Mrs. L. B. Newell, Charlotte, N. C., are spending a vacation in the Yellowstone National Park.

Dr. Lucius G. Gage and **Miss Margaret Elizabeth White**, both of Charlotte, N. C., were married August the 16th.

Dr. F. L. Siler, Franklin, N. C., died from post operative pneumonia, July, 1924.

Seaboard Medical Association will hold its annual meeting at Rocky Mount, N. C., December 2, 3 and 4, 1924.

Dr. Parran Jarboe and **Dr. Duncan Holt**, Greensboro, N. C., announce the formation of a partnership for the practice of general and urological surgery.

Drs. Gane and **Myers** of the **Alonzo Myers Orthopedic Clinic**, Charlotte, N. C., will conduct the orthopedic clinic of the Presbyterian Hospital, each Friday afternoon.

Dr. B. B. Steedly has returned to Atlanta, Ga., after spending two years in European and American clinics studying cancer. He is director of the **Steiner Cancer Clinic** of Atlanta.

The Medical Society of the State of Virginia will hold its annual meeting at Staunton, October 14, 15, 16 and 17. There is every promise that this meeting will be an outstanding incident in the history of the state society.

The Virginia State Board of Health has established a branch laboratory at Harrisonburg, Va.

Post-Graduate Clinic Tour to Canada, England and France. **Dr. William B. Peck**, managing director, Freeport, Ill., announces that a post-graduate clinic tour to Canada, British Isles and France will start May 18, 1925. The entire cost to be under \$1,000. The tour is open to physicians in good standing in their state societies and their families or friends.

Dr. W. W. Rankin, secretary of the North Carolina State Board of Health, will return November 1st after a year's leave of absence, to assume active charge of the Board of Health activities. Dr. Rankin has been doing standardization work throughout the United States for the American Public Health Association, co-operating with the Rockefeller Foundation. During his leave of absence **Dr. G. M. Cooper** has been acting state health officer.

Publications Received

PATHOLOGICAL TECHNIQUE—The new (8th) edition. **A Practical Manual for Workers in Pathological Histology and Bacteriology**, including directions for the performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By **Frank B. Mallory, M.D.**, Pathologist to the Boston City Hospital; and **James B. Wright, M.D.**, Pathologist to the Massachusetts General Hospital and Assistant Professor of Pathology, Harvard Medical School. Eighth edition, revised and enlarged. Octavo of 666 pages with 180 illustrations. Cloth, \$6.50 net. **W. B. Saunders Company**, Philadelphia, London.

The authors have in this new edition made additions and substitutions only in keeping with the real advances in medical knowledge.

The section devoted to the performance of necropsies should serve to stimulate many to increase their efforts along this line, without which we can make little progress in clinical medicine.

MEDICAL CLINICS OF NORTH AMERICA—**W. B. Saunders Co.** The July number is full of meat. From cover to cover it deals with important matters. Note some of the subjects: Functional Disorders Simulating Organic Disease; Chronic Gall-Bladder Disease and Chronic Appendicitis; Endocrinology and Pediatrics; Cardiac Pain; Treatment of Diabetes Mellitus; the Common Cold; Syphilis Simulating Tuberculosis; the Treatment of Obesity; Fits.

Each of these, and many others of equal value, are treated in an unusually instructive manner.

1923 COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION, Rochester, Minnesota. Octavo of 1377 pages, 410 illustrations. Philadelphia and London. **W. B. Saunders Company**, 1924. Cloth, \$13.00 net.

The collected papers of the Mayo Clinic and the Mayo Foundation for 1923 cover a great

part of the field of medicine and surgery, both clinical and experimental. Of especial interest is the elaborate discussion of the thyroid. This publication affords a ready means of keeping posted on what is being done in a clinic which is, at once one of the most productive, and the most talked-of, medical group in this country.

DISEASES OF THE EYE—By George E. De Schweinitz, Professor of Ophthalmology, University of Penn. Tenth edition. 865 pages, 434 illustrations. W. B. Saunders Co. \$10.00 net.

This, the 10th edition of Dr. De Schweinitz's book is worthy of its predecessors and its author. It is the product of the labor of this experienced clinician and scholarly medical scientist at his best.

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS—(3rd ed.)—By Geo. W. Norris, M.D., Prof. of Clinical Medicine in the University of Penn., and Henry R. M. Landis, M.D., Director of the Clinical and Sociological Departments of the Henry Phipps Institute. W. B. Saunders Co. \$9.50.

An entirely reliable guide written in an entertaining way. A comprehensive work of this kind should be often in the hands of the practitioner of medicine in any of its branches. To recall to his mind the fact that diagnoses can be made outside a laboratory. There is a short chapter on the electro-cardiograph which clearly sets forth the rudiments of the principles involved in its use.

LIFE INSURANCE EXAMINATION—Edited by Frank W. Foxworthy, M.D., formerly President American Assn. of Medical Examiners. C. V. Mosby Company, St. Louis.

It is of interest to note that reports from doctors as a prerequisite for life insurance have been required for only by a few years more than a century and that regular examinations were not instituted until about 1850.

The interdependence of agent and examiner and the necessity for mutual consideration is emphasized.

A careful reading of this book will shed light on many problems which puzzle the life insurance examiner and bring about more hearty co-operation with agent and Home Office.

MODERN METHODS OF TREATMENT—Logan Clendening, M.D., Asst. Prof. of Medicine University of Kansas. C. V. Mosby Co., St. Louis. \$9.00.

From the devotion of chapter 1 to "Rest" it is obvious that it is not intended to signify that no ancient methods of treatment are dealt with; but, rather, that treatment is brought up to date, and only those methods described which have stood some rational test.

The work is written in an admirable spirit, midway between scoffing nihilism on the one hand, and pathetic credulity or ignorant en-

thusiasm on the other. It is practical in the best sense of that much-abused word.

INTERNATIONAL CLINICS—J. B. Lippincott Company.

The latest volume contains a symposium on Physiotherapy, a subject on which there is little general accurate information in the profession. The diagnosis of right-sided abdominal conditions is of perennial interest. A discussion of the nervous and mental aspects of endocrine dysfunction is of the conservative type, not at all suggestive of the attitude of those who get their pathology or therapeutics from publications of a pseudo research laboratory.

FERTILITY AND STERILITY IN HUMAN MARRIAGES—Edward Reynolds, M.D., and Donald Macomber, M.D., Boston. W. B. Saunders Co.

One is inclined to wonder that the word "human" was not omitted, especially as the book comes out of Boston. The problem is discussed in a most exhaustive manner against a background of general biology. Emphasis is laid on the fact that in a large proportion of cases the male is the deficient partner.

DIABETES—ITS TREATMENT BY INSULIN AND DIET—Orlando H. Petty, M.D., Professor of Diseases of Metabolism, Graduate School of Medicine, University of Penn. F. A. Davis Co. \$1.50.

This is a handbook well suited for the intelligent patient, containing minute instructions for the home administration of insulin after the tolerance and dosage have been determined. It encourages us to believe that it will soon be practicable to have an intelligent patient administer his own insulin.

DISLOCATIONS AND JOINT FRACTURES—Frederic J. Cotton, M.D., F.A.C.S., Visiting Surgeon, Boston City Hospital. Second edition. 745 pages with 1393 illustrations. W. B. Saunders Co. \$10.00.

This book would probably justify itself if it did nothing more than emphasize in its title the intimate association of dislocations and varying degrees of fracture in or very near the joints. It is refreshing to read a book by an American medical man which is largely written from his own experience and voices his own conclusions. Too often one in search of the best, or, at least, the most accepted opinion, among the leaders of medical thought, is bewildered by the great number of diverse recommendations gathered from the four corners of the earth. Its general trend may be said to be conservative.

THE ANATOMY OF THE NERVOUS SYSTEM, from the standpoint of development and function. By Stephen W. Ranson, M.D., Ph.D., Professor of Anatomy in Northwestern University Medical School, Chicago. Second Edition, Revised. Octavo volume of 421 pages with 284 illustrations, some of

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them in colors. Philadelphia and London. W. B. Saunders Company, 1923. Cloth, \$6.50 net.

This author makes his subject fascinating by dealing with the functional significance of structure—by keeping in mind the living organism rather than the cadaver. The text is lucid and the illustrations expressive.

OPERATIVE SURGERY. Covering the Operative Technic involved in the operations of general and special surgery. By Warren Stone Bickhom, M.D., F.A.C.S. Former Surgeon in charge of General Surgery, Manhattan State Hospital, New York. Former Visiting Surgeon to Charity and to Touro

Hospitals, New Orleans. In six octavo volumes totaling approximately 5400 pages with 6378 illustrations, mostly original and separate Desk Index Volume. Volume 4 containing 842 pages with 772 illustrations. Philadelphia and London. W. B. Saunders Company, 1924. Cloth, \$10.00 per volume. Sold by subscription only. Index Volume Free.

TRANSACTIONS OF THE COLLEGE OF PHILADELPHIA—Containing the papers read before the college from January, 1923, to December, 1923, inclusive.

MONTHLY STATISTICS—Department of Commerce, Bureau of the Census.

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No. 9

SOME BIOLOGICAL ASPECTS OF EUGENICS

Laurence H. Snyder, North Carolina State
College

The idea of Eugenics goes back to the time of Plato. Since then there have never been lacking those who have urged that the human race would be improved if more care and attention were given to marriage unions. Lately these ideas have become so widespread and so vigorously urged that there has come into being a definite eugenics movement.

Two chief impulses have tended to bring this about. The first is the great proportional increase in feeble-mindedness. When a State like New York spends one-seventh of its income for the care of its insane and feeble-minded, it is time to look into the matter. The percentage of feeble-mindedness is increasing; not entirely due to the fast increase of this class, but also to the rapidly decreasing birth-rate of the better class. College graduates as a class are not reproducing themselves, while immigrants, some of them very poor stuff, are reproducing and multiplying rapidly.

The second great impulse is the spread of modern knowledge of the principles of heredity. This has done much towards furthering the modern eugenics movement.

The term Eugenics was coined by Francis Galton in 1883. He defined eugenics as "the study of those agencies under social control that may improve or impair the racial qualities of future generations, either physically or mentally." The two objects of eugenics are, first, to check the birth-rate of the unfit, rather than allowing them to come freely into being; and second, to improve the race, by furthering the productivity of the fit, through early marriages, and

the healthful rearing of the children of such unions.

The delusion that an improvement of the environment will remove human deficiencies is one that will have to be displaced. The question of heredity has been clearly reduced to a question of the germ plasm, and significant modifications of the germ plasm by environment are conceded by biologists to be very rare, if indeed they occur at all. Of course environment plays a large part in human life, in that it provides the medium for the expression of capacities. Questions and controversies as to whether heredity or environment is the more important are foolish, for each is needed for its particular function.

Social inheritance, or the handing down of knowledge, tools and the like, is most important in our organized civilized existence. Any progress which will be made will depend to a large extent on social inheritance. But heredity must decidedly be counted in when the attempt is made to evaluate the total "inheritance."

That heredity is certainly the basis of the characteristics which are restricted or brought out according to the nature of the environment, is clearly shown by experimental data. For example, experiments were undertaken with children of high and low initial ability, respectively, and the children were given special training to see if an equalizing effect would be produced in easily alterable traits, such as rapidity of addition. Without exception it was found that at the end of such experiments, although both groups had improved, the superior individuals were farther ahead than ever. Equality of training had widened rather than narrowed the gap.

Notable achievements have repeatedly appeared in certain families, to a degree that can not possibly be explained on a basis of opportunity — environment

alone. Likewise the other extreme, ineradicable criminal propensity and weak-mindedness, has been traced through certain families for generation after generation, so that it must be explained on a basis of hereditary transmission. Prof. Karl Pearson goes so far as to say that heredity is at least five or ten times as important as environment in the development of an individual.

The question of inter-racial marriage intrudes at this point. Eugenics and biology have a great problem in the immigration question. The biological aspects of immigration have been too long ignored. The future of the nation—its very life—is involved.

Reliable data is very scarce on the subject of inter-racial marriage. On the whole, there is very little evidence in favor of it, while some facts are decidedly against it. The negro-white cross produces the mulatto, a very inferior type. The yellow-white cross is also inferior. On the other hand, there is some evidence for the good effects of the mixture of the various white races: Irish-American, Scandinavian-American, and some others. The question of just which races can be successfully amalgamated with out own stock is one which must be solved if the immigration problem is to have any solution. There is also selection within the race to be considered. Only the best germ-plasm of other races should be permitted to mix with others.

The problem plainly has two phases, namely:

1. A selective union of the fittest, or a real conscious attempt to breed a superior race, and

2. The elimination of the obviously unfit by the prevention of their reproduction, with the purpose of ridding the present race of its heritable defects.

The first may be called positive or constructive eugenics; the second, negative or restrictive eugenics.

Constructive eugenics must be largely a plan of education; and even here the data on which to work is very limited. Even constructive eugenics

must be largely a matter of what not to do. The main difficulty in constructive eugenics is in determining just what combinations are best, and how to bring them about. This is practically impossible. Until we have a standard of some sort, a definite goal towards which to work, we can only blunder along. Moreover, some of the best individuals in the past have come from families which were not very promising. And it is from these chance matings among the general population that we must look forward to many of our best individuals in the future.

The eugenicist, even if he could perfectly control human matings, could only sort out and recombine existing characters; he could not create anything. The limit would eventually be reached, and it would be necessary to wait for new mutations to furnish further material. Moreover, the forces which are now at work are not so much adapting man to fit the environment as they are changing the environment to fit man's needs. Modern surgery saves and prolongs many lives, but the saving of individual lives does not extend the maximum length of life. The average length of life has been increased by saving individual lives, but since longevity is hereditary, the artificial prolongation of the lives of the hereditarily weak and short-lived may reduce the longevity of the race as a whole.

That the principles of Mendelism do pertain to human beings is generally accepted as true. In so far as it has been studied, they decidedly do. But reliable data is very hard to obtain. The Eugenics Record Office at Cold Spring Harbor has collected the pedigrees of hundreds of families, and has worked out the heredity of various traits, such as eye-color, hair-color, brachydactily, etc. The medical literature contains reference after reference to hereditary abnormalities. Medical men, however, commonly refer to a trait as heritable, if it appears in parents and offspring, regardless whether or not actual hereditary transmission was involved. Frequently such cases are not due to heredity at all, but to independent infection

of the offspring. In all the *hereditary* traits that have been studied, Mendel's laws are followed very regularly. Sex-limited inheritance also plays a part in human heredity, although only color-blindness, "bleeding," imperfect development of the iris, and a few other traits are known to be inherited in this way.

Negative eugenics has more of a demonstrative basis to work on, and can really accomplish more at present. If feeble-minded persons and others known to have traits inimical to the best development of the race are prevented from reproducing their kind, the percentage will soon decrease to a negligible one. It is known that a considerable proportion of defects are inherited on a Mendelian basis, and very probably all of them are, so that the results obtained would be decidedly desirable. This does not apply to diseases due to bacteria and other organisms, which are not transmitted by heredity. Susceptibility to a disease may be inherited, but never the disease itself.

The proposed methods of restricting the reproduction of undesirable are five:

1. Laws restricting marriage.
2. Systems of mating with the purpose of getting rid of defective traits.
3. Segregation during the reproductive period.
4. Sterilization.
5. Education in the principles of eugenics.

The first remedy, namely laws forbidding marriages of mental defectives, has been shown time and again to be impractical. If they are forbidden to marry, they simply have children without being married.

The second remedy, systems of matings with the purpose of breeding out and gradually getting rid of defective traits, has been shown to be possible with certain types of defectives, but its desirability is not so sure. This would not involve arbitrary mating of certain persons, but would be the preventing of the marriage of two individuals having similar defective traits. This would be difficult, however, as it is nearly impos-

sible to tell whether or not a person who is somatically normal is genetically normal. The Eugenics Record Office estimates that about 30 per cent of our population already carry recessive neuropathic traits. The only test is whether or not defects have appeared in the stock for three or four generations back. At best this test is only approximate. Such a scheme of corrective mating must presuppose a relatively high degree of intelligence and judgment on the part of those concerned, and this is precisely what we do not have in the case of the mental defectives whose defects we are trying to eliminate.

The third proposition, segregation, has many advocates; perhaps more than any other remedy. The main objection to it is the expense. No state provides for more than a very small percentage of its feeble-minded and epileptics, and it is very hard to get appropriation for even this. It would swamp any state treasury to provide funds for caring for them all. But the ultimate cost is mounting higher and higher by procrastination. Plans have been offered whereby such segregated colonies would be self supporting, which may prove feasible.

Sterilization, the fourth suggested remedy, is still on trial. A number of states have sterilization laws, but they are very little used, and have not been sufficiently tried out to furnish much valuable data. California is the only state which has performed any considerable number of sterilization operations. By sterilization is not meant the removal of the reproductive glands, but an operation which removes in the male a bit of sperm duct, and in the female a bit of oviduct. Later the ends might, if advisable, be reunited, and the reproductive power again made functional, although this possibility is rather doubtful. The arguments for and against sterilization are very strong, and perhaps only time can work out the solution. Our present knowledge of the result of the operation is rather limited, and our lack of adequate means of determining just who shall be sub-

ject to the operation makes its use rather restricted as yet. The possibility in this connection of the transmission of venereal disease presents a grave difficulty. There is much popular sentiment and ignorance to overcome, and we must continually remember that we are dealing with individuals, not with averages. However, laws providing for sterilization of defectives should most certainly be given a fair trial.

The fifth proposition, education of the people in the principles of eugenics, is the method which will probably have the most far-reaching effects. Public approval must be back of any such movement as eugenics, and to insure public support, the aims and methods must be understood by the public.

But too much must not be expected of eugenics. The general level of mental capacity may be raised; certain abnormalities may be eliminated; immunity to diseases may be increased; feeble-mindedness may disappear; and the general average of development may be lifted; but we cannot hope to miraculously create anything; we can have no reason to suspect that we can achieve qualities or characteristics not already present in men and women today. All we can hope to do is to eliminate the bad and recombine the good qualities to best advantage.

BLADDER DISTURBANCES IN WOMEN.

Frank D. Worthington, M.D., Charlotte, N. C.

Dysuria and polyuria are such frequent complaints with women that it is not at all unusual for them to escape the attention they rightly deserve. A certain hesitancy in informing the doctor of the ailment and the fairly prevalent belief, particularly among married women, that the symptoms are unworthy of comment combined with the knowledge of the doctor that the condition is frequently transient and of little importance, all conspire to produce unnecessary discomfort and on oc-

casion positive pain. The real frequency of bladder disturbances can only be estimated by continually questioning the patient directly when obtaining a history.

Bladder disturbances may be divided into two general classes: (1) those caused by lesions in the urinary tract, and (2) those caused by conditions outside the urinary tract. Those falling into the second class predominate by a large majority in the female, due to the anatomical relationship of the bladder to the genital organs and the frequent lesions of these organs, both congenital and acquired, particularly following pregnancy and labor.

Considering the lesions of the urinary tract itself, it is not contemplated in this article to treat of them in detail but suffice it to say that cystoscope is indispensable in intelligently diagnosing and treating them and I feel is just as essential an instrument in the armamentarium of the gynecologist as the Sim's Speculum. Proper correlation of the importance of intra—and extra—vesical lesions can best be determined by investigating both fields and comparing them.

The microscopic urinary findings are the most important indicators as to the advisability of cystoscopic investigation. It is not at all unusual in women of a nervous, high-strung temperament to elicit the complaint of frequent and at times painful micturition. In the absence of microscopic pus in the urine and any pelvic disease, the condition can be regarded as a neurological manifestation and treated as such by mild sedatives, changing the reaction of the urine internal lavage by copious intake of fluids, etc.

On the other hand persistent symptoms, pyuria or hematuria demand further investigation. They may result from lesions anywhere from the kidney, such as renal stone or pyelitis, to the urethra itself in the form of a stricture, etc. Kidney and ureteral lesions require the appropriate treatment, determined by cystoscopic, radiographic and microscopic examination. Bladder conditions, too, require the proper

treatment whether it be the removal of a tumor or simple irrigations. The large majority of bladder cases in women prove to be a simple cystitis, effectively treated by bland irrigations and instillations of silver nitrate. A few have even less than this, the inflammatory process being confined to the trigonum and best treated by dilatation of the urethra, insertion of a Kelly cystoscope and direct topographical application of relatively strong solutions of silver nitrate to the affected area.

Being essentially interested in the extra vesical causes of bladder disturbances I will take them up in more detail in order of their frequency as I see them.

(1) Varying degrees of descensus uteri to the extreme complete prolapsus. The results obtained from restoring the pelvic floor and genital organs to a normal position are among the most gratifying in the field of surgery. The symptoms of descensus are multiple but those referable to the bladder often predominate.

When the descensus is moderate and cystocele only small, good results are obtained by repair of the perineum and suspension of the uterus abdominally. The methods of suspension are numerous but to me a modification of the Gilliam by shortening the round ligaments extraperitoneally seems the most logical, does least to disturb normal anatomy and has served to permanently hold the uterus in position. Fixation of the fundus to the abdominal wall has distinct disadvantages, and changing the normal attachments of the round ligaments to the fundus not only frequently fails to preserve a normal position of the fundus but defeats the purpose of the operation when done for bladder symptoms by causing a distortion of that organ. When there is a marked cystocele present it should be repaired by plication of the supporting fascia.

In complete prolapse in women past the menopause we have gotten most satisfactory results with the Watkins inter-position operation and it offers a cure to many who would undergo any abdominal operation with unwarranted

risk to life. When any and all kinds of surgical procedures are contra-indicated a properly fitting pessary will support the bladder, prevent the accumulation of residual urine and obliterate a fertile field for an infectious cystitis.

(2) Retroposition of the uterus causes bladder disturbances by the pull of the cervix on the base of the bladder. Simple suspension is the treatment of choice.

(3) Pelvic Inflammatory Diseases—In this heading I include all inflammatory conditions whether their origin be specific, tuberculous or from any other cause. The adhesions present distort the vesical wall and the inflammatory process involves the wall with resulting oedema and thickening. Freeing of the bladder and extirpation of the pathological tissue allows the bladder to resume a normal condition.

(4) New Growths—Bladder disturbances are uniformly present as an accompaniment of new growths, whether they be due to mechanical pressure or malignant invasion. The former requires surgery, the latter careful consideration before surgery is practiced. If a carcinomatous ovary has invaded the bladder wall by direct extension, removal of all malignant tissue may result in a permanent cure since this type of tumor is relatively benign. If however the bladder is invaded by carcinomatous process extending from the cervix or fundus little can be hoped for by operation.

(5) Acute ante-flexion may produce frequency of micturation by pressure upon the fundus. This is usually a congenital condition. A normal pregnancy usually relieves it and in other cases a pessary or manipulation may suffice.

Conclusions:

(1) Bladder disturbances in women are of two origins.

(a) Intra-vesical.

(b) Extra-vesical.

(2) The latter predominates.

(3) Cystoscopic measures are essential aids in arriving at the true condition.

(4) Proper treatment gives gratifying results.

TUBERCULOSIS—THE SOCIAL DISEASE.

By Edward O. Otis, M.D., Boston

To be social is to mingle one with another. The word social from the Latin word socius means companion, society—means a group of companions or people. Hence when we speak of a social disease we mean a disease which is the result of people mingling together in close contact. Obviously then, a social disease is one which is communicated from one to another when in close contact, either directly or indirectly. That means a communicable disease. We say, for example, that syphilis is a social disease because it is an infectious disease transmitted from one person to another.

Tuberculosis is conveyed from one person to another through the sputum as in coughing and also in the dried sputum when it gets into the air as dust. But tuberculosis is a social disease from another and a very important aspect. All unfavorable social conditions—the way people work and live—are predisposing factors in contracting tuberculosis. Bad hygienic conditions of all kinds lower one's resistance, and when in a state of lowered resistance one is especially susceptible to the tuberculous infection or to the outbreak of a latent infection already existing in the body. As the tubercle bacillus is more widely disseminated than almost any other germ, one in a receptive state—a lowered resistance—is more likely to become infected with it.

Other infectious germs like the spirochete of syphilis are only conveyed from one person to another or through the medium of some article upon which they cling, while the tubercle bacillus is dust borne. There are always plenty of bacilli carriers in any community, some known and some unknown, to keep up a constant supply.

We have, then, the two factors which make tuberculosis preeminently a social disease: First, the universality of the tubercle bacillus, and second, the deterioration of health in modern indus-

trial conditions—a constant body of individuals who have lost their resistance. We are all familiar with the various causes of this lowered resistance.

Poverty is the chief one, and an income insufficient for maintaining a normal, healthy existence. Then we have various unwholesome occupations, such as the dusty one, particularly metallic and mineral dust. Stone workers, for example, are very prone to tuberculosis, and so are grinders. Bad housing, crowding in a few rooms, insufficient and improper feeding, lack of fresh air and sunshine—"Where the sun does not come there the doctor goes" says the proverb—insufficient rest, dissipation of various kinds, worry, and monotony are all predisposing causes. One of the most important factors in lowering resistance, in my experience, is *chronic fatigue*.

How many patients come to us who tell the story of constant *tire*. They get up in the morning tired, they drag through the day's work tired, and they go to bed exhausted. This condition is particularly true, in my experience, with young women in various clerical employments, such as bookkeepers and stenographers. Their work and the length of time devoted to it is beyond their normal fatigue limit, and the time for recuperation is not sufficient to renew the forces used up in the daily occupation. Finally a time comes when the resistance reaches such a low point that the tuberculous infection finds a receptive host.

In our future health work I trust we may be able, by initial and periodic examinations, to determine in some way this fatigue limit, so that one may be able to adapt his output of energy to its daily supply.

This applies not only to one's regular occupation but as well and quite as much to what he does after work hours. One may be able to perform his ordinary day's work with his ordinary day's energy, but by added overtime or evening work or by his amusements he may bring on over-fatigue which the night's rest does not compensate, and so he falls into a state of chronic fatigue.

Occupation, as has been mentioned, may be the factor which produces lowered resistance, such as the dusty trades. Through the inhalation of certain kinds of dust the lung tissues may be impaired. Housing is another potent social factor in affecting one's health. Insufficient room, lack of fresh air and sunshine in the house, insalubrious location, dirt, are all friends of the tubercle bacillus. We are all familiar with the statistics of the varying incidence of tuberculosis in the one room, two room, or three room abode. The more human beings are crowded together, the more tuberculosis. After all, poverty and an insufficient living wage are the fundamental social factors in making the bed for the consumptive, and just so far as poverty disappears, tuberculosis will continue to decrease.

I believe Dr. Haven Emerson is right when he says that "improvement in industrial conditions and in the standards of living in wage-earners and their families is a more potent factor in determining the reduction of tuberculosis mortality in this country and abroad during the past thirty years than any of the specific or accessory measures employed for attack against the disease." Dr. Emerson, who has recently published his investigations in regard to the tuberculosis condition in Germany, says that the death rate from tuberculosis in that country increased 50 per cent from 1914 to 1919, and still the mortality is increasing. This increase he attributes to poverty and unemployment, and in particular to "widespread lack of nutrition, clothing, and heat, and the limitations of housing, which have reduced bodily resistance and facilitated the development and reactivation of latent tuberculosis." In Berlin, for instance, where the mortality from tuberculosis in children under 14 years of age had increased from 41 per 100,000 in 1913 to 106 in 1923, the quarts of milk daily consumed in 1913 were 1,180,000, and in 1923 135,000! In Cologne 225,000 quarts of milk were consumed daily in 1913, and in 1923, 3,600 quarts! Similar conditions as to the deficiency of other articles of food exist in Germany

says Dr. Emerson.

Tuberculosis is an infectious disease, as we know, but we also know that there is no disease in which social conditions play so important a part in preparing the host for the reception of the infectious germ. The obvious practical inference is that we must improve these social conditions, both with the individual, the family, and the community. The living together and the working together of the great family of human beings must be made a state of wholesome existence. This we must do by education and repeated education. By, so far as is humanly possible, the abolition of poverty. By a living wage and a reasonable working day. By protection of the working man from injurious influences in shop, factory, and store. By reasonable protective legislation. By proper housing and sufficient and wholesome food. By medical supervision and periodic examination of those engaged in industrial establishments. By the care and protection of children. By community cooperation in enacting and maintaining sanitary codes. All these things have a direct bearing upon our efforts in the prevention of tuberculosis. The tubercle bacillus is an epicurean and goes where his fastidious taste is gratified. Unlike the unclean spirit seeking rest he avoids the house "swept and garnished" and with his evil companions seeks an abode suited to his depraved taste.

Any and every instrumentality which makes for better social conditions of existence must and should be an integral part of the working forces directed against the tuberculosis menace. We as tuberculosis workers should coordinate our endeavors with all organizations whose object is to better social health conditions.

Our two great objects are to render the individual unreceptive to the tubercle bacillus and to control, so far as we can, its dissemination.

PREVENTIVE MEDICINE.

J. P. Munroe, M.D., Charlotte, N. C.

At the close of the last century, Dr. Osler in a historical address, said "For countless generations the prophets and kings of humanity have desired to see the things which men have seen and to hear the things which men have heard in the course of the wonderful nineteenth century. * * *

To us whose work is with the sick and suffering, the great boon of this wonderful century is the fact that the leaves of the tree of science have been for the healing of the nations."

Were Osler living today and speaking, he could truthfully say that, for the last quarter of a century, the leaves of the tree of science have been for the preventing of disease.

It is true that sanitation was first placed upon a scientific basis in the latter part of the eighteenth century by the discovery of vaccination by Jenner. Thanks to Jenner, not a face in this audience is pock marked. One hundred and twenty-five years ago more than half of you would have been scarred.

Preventive medicine was an incomplete science until bacteriology opened up undreamed of possibilities. Pasteur was a primary investigator along the bacterial lines of the origin of disease in 1862. Pollender and Davis in 1863 discovered the germ causing anthrax, and Koch in 1882 the tubercle bacillus, and cholera bacillus in 1884. Other discoveries followed these in rapid succession until nearly all the serious epidemic diseases have been proven to be due to a germ of some kind. In most instances the germ has been recognized, isolated, and identified with its peculiar disease. Naturally, then arose the question of how to protect the body against

these germs. This is a three-fold problem.

First—How to destroy the germs, and prevent their propagation. Second—How to prevent them from getting into the human body. Third—How to counteract or neutralize the effect when introduced into the system. These are the problems which preventive medicine has been handling with wonderful success in the last quarter of a century.

In the narrow isthmus connecting the two continents of America, is now one of the most famous engineering structures in the world, known as the Panama Canal. This comparatively low, marshy country was once known as "the white man's grave," and on the Pacific coast was founded by the conquerors the first city of the new world, and the remains of this city are still to be seen there under the name of Old Panama. Along this Pacific coast, Spaniards, French, and English fought for years. Raleigh, Drake, and the buccaneer Morgan raided the country seeking for gold, but they found in the fever a stronger enemy than the Spaniard. For years, this fever stricken country was abandoned to negroes and half-breeds. In 1885 seekers after gold from the California coast completed a 50-mile railway across the Isthmus connecting the two oceans. It is said that every tie in this railway cost a human life.

In 1881 the French under De Lesseps, undertook to construct an ocean level canal from ocean to ocean. As one sails along the placid waters of the preset canal, he sees here and there broken pieces of machinery, incomplete excavations, and inquires the meaning. The answer is, the French failed in their stupendous undertaking after spending untold wealth in money. Did they fail for lack of money? No. It was for lack of more human lives to sacrifice in the undertaking which was to them impossible. In nine years 20,000 lives were lost in this undertaking. In 1889, for \$40,000,000 the United States acquired the rights and interests of France in the canal. Before be-

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ginning construction, America's greatest Sanitarian, General Gorgas was given the task of cleaning up the isthmus and eradicating the cause of malaria, yellow fever, typhoid, and other fatal infections. After several years of vigorous work, he succeeded in eradicating yellow fever completely from the zone, and malaria fever almost entirely from that whole section. With previous adoption of similar methods in Cuba, and the adjacent islands, yellow fever which was once a menace and a terror, not only to those countries, but to many of the Southern States, became a thing of the past. Malaria, which 20 years ago was said to be the greatest destroyer of human life in the world, was reduced to a secondary place so far as our country is concerned. By the adoption of proper sanitary measures, typhoid fever which was once a veritable scourge in North Carolina, is now seldom seen. Diphtheria has come under control, and even tuberculosis, which formerly was called "the great white plague," has had its mortality rate greatly reduced.

By reason of this campaign against the so-called communicable diseases, the average length of life has been greatly increased. Indeed, it is now recognized that "there is no iron law of mortality." According to a report prepared by the National Conservation Commission 15 years ago, it was shown that in India the average duration of life was 25 years; in Massachusetts 45 years; in Sweden 50 years. The length of life is increasing wherever sanitary science and preventive medicine are applied. In India where there is no sanitation it is stationary; the rate of increase in Europe and the United States has been increasing every century.

Statistics in New York show that the increase in the expectation of life has been almost entirely confined to ages before 35. The expectation of life for middle and advanced age has been reduced. This leads us to consider the importance of the diseases of middle age. This is the subject of a very exhaustive

book recently published by F. A. Davis Co. In this book, the author divides life into the following periods:

Childhood	-----	Ages 1 to 10
Youth	-----	Ages 10 to 20
Young adult	-----	Ages 20 to 40
Middle age	-----	Ages 40 to 70
Old age	-----	70 plus
Extreme old age	-----	95 plus

The diseases of middle age are sometimes called the "wear out diseases."

There are two factors, however, to be considered: First—The strain and stress of life wearing out the tissues and organs of the body; second—former diseased conditions and latent infections weakening the organs and making them more susceptible to wear. The most important diseases under consideration are: Diseases of the heart, apoplexy, Bright's disease, and high blood pressure. Some of them have their starting point in infections or germ diseases which make the wear out easier and come earlier. The importance of these early infections is recognized by the City of New York in the establishment of heart clinics for children.

In this Clinic, it is found that the infection or germ doing most damage at this period of life produces a group of diseases included under the general term—Rheumatic Fever. This germ usually enters the system through the tonsils and, if it goes no farther, is called rheumatic fever affecting the tonsils. If from the tonsils, it is conveyed to the joints, it produces what is called articular rheumatism. Then again it may affect the heart and we have Rheumatism of the heart which may do permanent damage and sometimes produces what is called a leaking heart. Then it may affect the nervous system called St. Vitus Dance or Chorea. Children in this heart clinic are, therefore, treated with reference to all these conditions, special attention being given to the heart, with a view to preventing that permanent damage that is almost sure to bring trouble in middle life. I may call attention here to a form of this disease sometimes called "growing pains." "Growing pains," as a rule,

means low grade rheumatic fever and calls for careful examination of the heart and kidneys.

The other three conditions mentioned, namely: Bright's disease, apoplexy, and high blood pressure are all conditions that we expect to find usually in middle life. It is true high blood pressure is not in itself a disease, but it is a symptom that may mean Bright's disease or it may be a prime factor in causing a rupture of a blood vessel of the brain producing apoplexy, and it always makes a strain on the heart, which sooner or later is apt to bring on degeneration, dilatation, and heart failure. Heart disease caused 175,000 deaths in this country last year, about twice as many deaths as any other disease. Last year 90,000 people died of apoplexy and 91,000 of Bright's disease in this country.

What is the remedy for this gradually increasing rate of mortality in middle life? There are two things to be done. First—Recognize and eradicate the causes in early life that weaken these important organs. Second—make periodic examinations in order to detect latent infections and know the beginning of any of these degenerative diseases to the end that appropriate treatment may be instituted before serious inroads have been made into the health.

The Metropolitan Life Insurance Company, and the Pennsylvania Life Insurance Company realizing the importance of this, have arranged to give free examinations to all of their policy holders. After paying for these examinations, one of these Companies calculates that, since the year 1914, they have made 200% profit on the money expended by having fewer death claims to pay. It is stated that the expected mortality had been reduced 53% since these examinations were instituted. It is well known that in the recent Army examinations for the World War, nearly 50%, or to be exact, 468 out of 1,000 were found defective. In an examination made recently under the auspices of the Academy of Medi-

cine in New York, 958 people out of the ordinary walks of life were examined, and of this number, only 24 or 2 1-2% were found to be perfectly well; 697 or 73% were definitely needing treatment, and 237 needed hygienic advice.

Recently, the Brooklyn Health Examination Committee, at the request of the National Health Council started a ball rolling which, like a snow ball, will grow greater and greater until it dominates the profession and will doubtless modify the character of our future practice.

In circular form they have sent out such slogans as this, "Be Sure of Your Health." "Have a Health Examination by Your Physician Every Birthday." When your patients submit themselves to you periodically and your report shows them to be in excellent health, the effect on their minds is instantaneous.

If your examination, however, points out any definite tendency toward disease, your patient's gratitude will be earned, for you can show him before it is too late, just what to take for treatment and prevention.

Weak heart, affected kidneys, high blood pressure all may exist without signs that the patient will detect. One should not trust appearances but should consult his family physician as to how to "be sure of his health" and prolong life. The first examination will require sometime and should cost more than an ordinary Doctor's visit, but it will be worth much more. Let me say again, it should be repeated every birthday.

Summary and Conclusions.

Individuals as such cannot cope successfully with the contagious and communicable diseases. It is the special function of the State and County to use proper measures to eradicate their causes. It is the duty of every citizen to co-operate with the health authorities in this work, as a matter of self-protection and a duty to humanity.

The Diseases of Middle Life.

This is a subject of immense importance, but it is a matter primarily be-

tween the individual and his physician. The State and Civic organizations take cognizance of them only in an educational way. As a matter of education—to encourage every one to have: first—a periodic inventory made of his physical assets and liabilities, covering all the important functions of the body; second—secure expert advice as to the various matters concerned in promoting good health and maintaining the best physical standards. This means instruction as to diet, the air one breathes, rest and exercise, work and play.

NEPHROLITHIASIS AS A COMPLICATION OF PREGNANCY.*

By Aime Paul Heineck, M.D., Chicago, Ill.

A somewhat exhaustive survey of the literature of the subject supplemented by a careful analytical study of my private and hospital cases leads me to formulate the following conclusions.

Renal lithiasis associated with, or complicating pregnancy has not received adequate study. Not infrequently, it escapes detection; not uncommonly, it is misdiagnosed and therefore injudiciously treated.

Nephrolithiasis occurs at all periods of the child-bearing age; in primiparae, deutiparae, and multiparae. It may co-exist with concretions in other organs. It is observed in pregnancies normal or abnormal in type, location and evolution; it may be one of two or more pathological states co-existing with, and influencing or not, the evolution of an otherwise normal gestation.

Renal calculi, associated with or complicating pregnancy, are unilateral or bilateral, single double or multiple and (like calculi in the non-pregnant) vary in location, shape, size, mobility, chemical composition and other characteristics. Their formation either antedates,

is simultaneous with, or consecutive to, the first or any succeeding pregnancy of the patient at hand.

The calculi excepted, the calculous kidney may show but slight structural deviation from the normal; or it may be anomalous in a type (single kidney), (fused kidney), b. location (ectopic kidney), or c. structure (polycystic kidney, hydronephrosis, pyonephrosis). The anatomical anomalies presented by a calculous kidney are congenital, acquired, or both.

If acquired, they are either of independent origin, or determined by the presence of calculi. Renal calculi, sooner or later, provoke structural kidney changes, degenerative, inflammatory, hyperplastic or neoplastic, in nature.

Nephrolithiasis, occurring in pregnant women, determines the same anatomical changes, in the affected kidney as are found in the calculous kidney of the non-pregnant. These structural changes, the resultant of irritation, obstruction, and infection, manifest themselves by exudative, proliferating, and degenerative processes, often suppurative in character; rarely, neoplastic. Under the influence of stones, the epithelium of the renal tubules may necrose, form cysts or become malignant. In the absence of infection, the lesions presented are those of atrophic and diffuse nephritis. Generally, the aseptic stage of calculus is brief. Infection sooner or later, supervenes and gives rise to one or more of the following conditions:

Pyelonephritis with or without abscess formation, perinephritis, sclerotic or suppurative pyonephrosis, and partial or complete conversion of the kidney into a sclero-lipomatous mass.

In nephrolithiasis, early diagnosis leads to the institution of logical treatment before irreparable kidney changes have taken place. An accurate diagnosis presupposes an intelligent interpretation of the subjective symptoms, of the bacterial, chemical and microscopical urinary findings, of the X-ray data and also the combined use of the cystoscope and the X-rays as employed in

*Abstract of an as yet unpublished paper read at the annual meeting of the Illinois Medical Society, 1922, Chicago, Ill.

pyelography. In every case, there should be a complete roentgenographic exposure of the urinary bladder of both kidneys and both ureters. The skiagraphy makes a permanent record. Skiagraphy shows (a) whether calculi are present in one or both kidneys; (b) the number, size and shape of the calculi; (c) their location—pelvis, calyx, parenchyma, or pyo- or hydronephritis cavities; (d) the presence of extra-renal calcareous deposits.

Pyelography, a most valuable diagnostic procedure, should only be employed when the dangers attending its use are far outweighed by the information which it offers. It enables us to determine the presence or absence of pathologic changes in the renopelvic outline and whether a doubtful shadow is or is not extra-renal.

Pain, local and radiating, is the most important subjective symptom. Its character and intensity are influenced by many factors; size, nature and mobility of the calculus or calculi, degree and activity of infection, etc. It is provoked by walking, fatigue or exercise, and subsides with rest. Hematuria, intermittent or continuous, scant or profuse, and pyuria are also important symptoms.

In cases of persistent lumbar pain, a radiograph of the kidneys, ureters and urinary bladder is of great service to the clinician. Radiography of the urinary system has limitations, determined to a large extent by:

- a. Defective technique.
- b. Defective interpretation of shadows seen in the negative.
- c. Impossibility of obtaining a satisfactory negative.
- d. Defects in negatives.
- e. Caseous kidneys.
- f. Calcified mesenteric glands.
- g. Phleboliths.
- h. Bony deposits in the pelvic ligaments.

If the symptoms be mild, obscure, indefinite and identification of the X-ray shadows uncertain the medical treatment of renal lithiasis is to be instituted

and the pregnancy is permitted to proceed undisturbed. After the puerperium, or better after the period of lactation, operative treatment is to be urged in suitable cases.

As many renal stones are spontaneously expelled, a patient should be kept under observation for a limited period of time and nature given full opportunity to remove the stone or stones without recourse to surgical intervention. Operations for renal stones, give such good immediate and remote results, that treatment with supposed solvents find few advocates.

In the absence of contra-indications, operation can be performed with safety up to the sixth month of pregnancy, to both mother and child. Up to that time in the absence of contra-indications, operative treatment is to be instituted in cases:

(a) Of Renal calculi too large to be spontaneously expelled through the natural channels. Even if the symptoms be recent in origin, or slight in intensity, nothing is gained by delay. Be not too optimistic as to small renal calculi; of all calculi they are the ones most apt to lodge and become impacted in the ureter.

(b) Of multiple calculi, irrespective of site, size, or number.

(c) Of recurring attacks of excessive pain localized to, or radiating from, the renal region.

(d) Of profuse or continuous hematuria.

(e) Of acute pyelonephritis, of cortical or pericortical pus formation and pus collection, and bilateral pyelonephritis.

(f) Of a calculus giving rise to urinary retention within the renal pelvis. Such retention, always a menace to kidney integrity, may lead to hydronephrosis, pyonephrosis, etc. A stone in the cortex of the kidney does not furnish as urgent an indication for operation as one in the renal pelvis.

(g) Obstructive calculous anuria. This condition calls for immediate relief.

(h) Of bilateral nephrolithiasis. In bilateral cases, first operate on the least involved kidney provided there is no acute pathological process in the other kidney, requiring immediate attention. In from two to three weeks, operate on the other kidney. If one of the kidneys be the seat of acute complications, it should be the first to receive surgical relief.

(i) Of stone in one kidney and disease in the other.

(j) Of renal lithiasis co-existing with tubercular or neoplastic disease of the same kidney.

(k) Of a calculus or calculi in a patient's only kidney; here, the patient's existence depends on the unhampered function of his remaining or sole kidney.

Nephrolithiasis and its complications are subjected for cure to the following operations, each of which has its respective indications, limitations and increasing field of usefulness—pelviolithotomy, nephrolithotomy, nephrostomy, incision and evacuation of perinephric phlegmons. It may be necessary to supplement any of the fore-mentioned operations with temporary drainage of the renal pelvis, renal parenchyma, or perirenal regions. Always ascertain, before operating for renal stones the functional efficiency of the opposite kidney; as the necessity for a nephrectomy may arise unexpectedly during the course of any kidney operation.

Pelviotomy or pelvic-lithotomy, the operation of election, the operation most generally used for nephrolithiasis, is well adapted to the removal of stones present in the renal pelvis. With it, dangerous hemorrhage, immediate, consecutive or secondary is of rare occurrence. Pyelotomy does not injure the renal parenchyma. It is unsuited for removal of voluminous or branched calculi. The pelvis is to be incised on its posterior vascular aspect.

Nephrotomy or nephrolithotomy, is attended with destruction of kidney tissue, and followed at times by secondary hemorrhage. The friability of the

kidney tissue may be such that the stitches tear out. Nephrotomy permits a thorough exploration of the organ and a complete removal of the calculi. It possesses the signal advantage of not entailing the sacrifice of the kidney. It is employed also when calculus or calculi lie just beneath the renal surface, when the renal pelvis is abnormally small or if the kidney is so bound by adhesions that its exteriorization is inadvisable. If pyelotomy be out of the question, nephrotomy is the operation of election for nephrolithiasis. Usually all the calculi can be removed through a large incision; in special cases, several small incisions may be made. If infection exist; pass a drain through the cut cortex to the renal pelvis, also pass a drain to the kidney.

Nephrectomy is indicated:

(a) In multiple, parenchymatous, large coral-shaped calculi unsuited to pyelotomy or nephrotomy.

(b) In renal hemorrhage that cannot be checked.

(c) In cases presenting advanced necrotic, suppurative or destructive renal changes.

(d) When the kidney is reduced to a mere shell.

(e) When the kidney has been transformed into a sclero-lipomatous mass.

(f) If it seems probable that nephrolithotomy will leave a permanent urinary fistula.

(g) In chronic fistulae of the kidney, pelvis or ureter which have not yielded to non-operative treatment.

(h) In malignant disease such as tuberculosis, cancer, etc., in a stone bearing kidney.

If there be doubt as to the functional integrity of the other kidney, nephrectomy is not to be performed. Nephrectomy has had to be performed during the actual existence of pregnancy in many cases with satisfactory results as regards the mother, the continuance of pregnancy and the health of the child.

Nephrolithiasis in pregnant women calls for the same operative procedure as in the non-pregnant. In the preg-

nant these operative procedures have the same indications, limitations, palliative and curative efficacy as in the non-pregnant. During pregnancy, the lumbar route of approach to the kidney is the only one that can be considered. Pregnancy apparently does not unfavorably influence the prognosis of operations for the relief of nephrolithiasis.

Operations for the relief and cure of nephrolithiasis and its various complications do not, any more than other major abdominal operation such as appendectomy, cholecystectomy, etc., unfavorably influence the course of pregnancy. They do not jeopardize the foetal or maternal life.

In the pregnant, after operation performed for nephrolithiasis and any of its various complications, gestation usually follows its evolution undisturbed and is but slightly more hazardous to mother and child than pregnancy under normal conditions, provided the remaining kidney is functioning normally. Parturition and lactation are uninfluenced. The nephrectomized woman may be permitted to marry, or if married to undertake the risk of pregnancy, provided she is in otherwise fit condition. As a rule, there is no reason to interrupt pregnancy occurring in women with only a single kidney. If the remaining kidney is healthy, the strain of pregnancy can be fairly well borne. The development and persistence of serious symptoms may, if operative treatment be absolutely contraindicated, call for the induction either of abortion or of premature labor.

GAS BACILLUS INFECTIONS OF WOUNDS IN CIVIL PRACTICE.

By Fred C. Hubbard, M.D., North Wilkesboro, N. C.

The subject of gas bacillus infection, variously designated as emphysematous gangrene, gaseous phlegmon, gangrenous emphysema, etc., is one of increasing interest to medical men, especially

the surgeon. Although comparatively rare in civil life previous to the recent war, it seems at the present to be very prevalent. This is evidenced by the frequent report of cases in recent medical literature. In the May issue of *Surgery, Gynecology, and Obstetrics* nine cases effecting different parts of the body were reported. The previous rarity of the condition is perhaps accounted for, in part at least, by mistaken diagnosis and faulty classification of cases; septicæmia being probably the condition most often confused with gas bacillus infections.

Gas gangrene was first described clinically by Masionneuve in 1853. The infectious nature of the disease was first shown by Bottini in 1871. The infecting organism, the bacillus of malignant edema, was first described by Pasteur in 1877 as the "vibron septique." Several years later this organism was again found in the human body by Woch and described. In 1891 Welch discovered and described the bacillus aerogenes capsulatis which has since been considered the chief causative factor in cases of gas bacillus infection. Other organisms closely associated in this condition and capable of producing the condition either alone or in combination with the bacillus aerogenes capsulatis are, the vibron septique, bacillus oedematis, and the bacillus sporogenes. According to Keen all four of these organisms are capable of breaking down proteins and carbohydrates and of producing hydrogen and carbondioxide in greater or less quantities, and in this way producing the characteristic signs and symptoms of gas bacillus infections.

While great light was thrown upon gas bacillus infections during the recent war as regards the bacteriology and morbid anatomy, and great progress made in the treatment of these infections; still there is quite a bit of difference of opinion among the different observers as to the relative importance and frequency ascribed to the different organisms occurring in this condition.

There seems to be in the minds of some more recent writers, also, more or less confusion in regard to the action and clinical symptoms produced by the bacillus aerogenes capsulatis and those produced by the vibron septique. Furthermore a distinction is made between the two upon this ground. So far as I can determine, however, these observations were not checked up by laboratory examinations and diagnosis, and cannot, therefore, be relied upon with certainty. Nevertheless it would appear that there still exists considerable uncertainty and haze as regards the differentiation of clinical phenomena produced by these two organisms in particular. The same is true as regards the relative frequency and importance of the different organisms in the production of the disease. It remains for someone to continue the studies in this direction which were interrupted by the close of the war, and report in a more definite way, in order that this phase of gas bacillus infections may be cleared up.

Clinically the different types of gas bacillus infection vary also in the report of different observers; the description of the different types depending upon the morbid anatomy, the number of muscles involved in the process, and the physical signs and symptoms presented at different periods in the development of the infection. According to Binnie, gas gangrene presents itself in three main types: (I) Fulminating; (II) common; (III) delayed. This classification was based upon observations made during the war. It seems to me to apply admirably also in civil practice.

The main purpose of this paper is to consider briefly, and in the way of a review, what is generally understood to be a classical or common type of case of gas bacillus infection and to report on two cases observed recently.

The bacteriology of gas bacillus infection having been considered, it might be of interest to dwell for a moment upon some of the more important predisposing factors also, since these are

very often the determining factors in the development of the disease, as well as the outcome.

The infection usually develops in severe wounds, most commonly of the extremities, although it may occur in any organ of the body. The injury may be a severe crush in which the main blood supply to a muscle or a group of muscles is destroyed immediately or by thrombosis later from injury to the walls of the vessels. It may be a gun shot wound or a compound fracture of the bones of the part as a result of which dirt, foreign bodies, or particles of clothing are embedded in the wound. Usually, also, there is more or less extensive laceration, contusion, and grinding up of the muscles. Binnie says that devitalized muscle is the pabulum par excellence for anaerobic bacteria. Next comes hemorrhage, shock, and cold with usually an associated low blood pressure, all of which act as potent factors in the production of the disease. Usually, also, certain aerobic bacteria are present and promote the action of the anaerobic bacteria by using up the oxygen in the tissues.

The gross morbid anatomy of gas bacillus infections is described most accurately I believe by Sir Cuthbert Wallace. He described the changes under two heads: (I) Group gangrene; (II) segmental or massive gangrene; depending upon whether one single muscle, a group of muscles, or all the muscles of a part are implicated in the process. The disease is, so to speak, a longitudinal one; infection finds difficulty in passing from one muscle to another but easily extends up and down muscles from end to end. The muscles involved change color, lose their contractility, and usually become brick red; to which condition he has given the name "red death." About this time the gas which is generated in the muscle begins to be obvious to the eye as bubbles, which can be pressed up and down between the fibers. The substance of the muscle becomes friable, the color then changes to yellow, and in the end becomes black. The connective tissues

lying next to the muscle may be little altered. At times it is filled with white, yellow, or blood tinged edema. Gas may or may not be present in the aerolar tissues and when it is present tends to find its way along the main vessels of the limb: It also escapes into the subcutaneous tissues and follows the perforating arteries and often extends far beyond the limits of the disease. Leucocytic infiltration has been shown to be conspicuous by its absence in the muscular tissue involved. The production of gas causes swelling and tympanites of the limb before it gives rise to crepitation which is discernible by the fingers. The stethoscope when used with varying pressure may, however, reveal a crackling. The presence of gas can be demonstrated by X-ray plates, but the gas must be in rather large quantities. This takes place only rather late in the game, however, and for this reason cannot be relied upon in acute cases. It seems that it would be of great use in subacute and delayed cases. There are supposed to be certain differences, also, in the naked eye appearance in the tissues from infection with different organisms. Another point of doubt arises here, however, on account of the difficulty in identifying the bacilli in man.

In the consideration of the symptoms and signs of a case of the common type of gas bacillus infection one would expect in 20 to 48 hours following the injury a diffuse swelling of the tissues about the point of injury. Gradually the tissues assume a livid appearance, later a dusky violet, and upon palpation yield fine crepitus. The secretion from the wound is reddish, brownish, acrid, foul smelling, and as a rule contains bubbles of gas. The overlying cuticle may be raised with blebs which contain bloody serum. There are often at the onset, chilly sensations, and a feeling of tension and pain in the wound. The temperature rises, and the pulse rate goes up. If the wound is opened the muscles are found to be non-contractile, necrotic, and separated from their

aponeuroses by an exudate which is hemorrhagic, necrotic and contains bubbles of gas. The tissues may be extensively edematous or emphysematous, the patient becomes profoundly prostrated, is delirious, and a majority of cases succumb to the overwhelming toxemia. The process extends with amazing rapidity. The onset may be extremely acute and constitutional symptoms and gas production present within four hours, according to Binnie. In a very few hours a patient may pass from a condition seemingly very good to one of extreme gravity.

The treatment of gas bacillus infection may be grouped under two headings: (I) Prophylactic; and, (II) active.

Under the heading of prophylactic treatment the following points should be noted especially: (I) The avoidance of all things in the way of bandages, splints, tourniquets, damming back of discharges by dressings, persistence of shock, and injury to blood vessels by sharp spicules of bones and by stretching them in the reduction of fractures and dislocations. (II) The mechanical cleansing of the wound as soon as possible after the injury, removal of shattered shreds of muscular tissues, etc.

The active treatment of the patient depends largely upon two conditions: The condition of the patient and the extent of the injury and infection. Thus in one patient the condition of shock may be so extreme as to demand treatment previous to any radical surgical procedure. One patient who is in good condition may be subjected to an operation to eradicate the diseased muscle or muscles while the condition of another one might demand amputation, even though the diseased process might not be any further advanced in one than the other.

In the case of the tissues of the trunk, free incisions are recommended in order that an outlet may be afforded for the toxins and that it may be possible to bring disinfecting agents into direct

contact with the tissues.

In gas bacillus infection of the extremities, if the condition is recognized early and the condition of the patient is not extreme the symptoms may subside after free incisions are made into the effected parts. The muscles affected should be exposed as thoroughly as possible and as much of the diseased portions removed as possible. Care should be exercised not to injure any more vessels than can be helped in making these incisions, on account of the fact that the blood supply to the unaffected parts may be injured and the extension of the diseased process to normal parts be promoted. The wounds should be subjected to frequent or continuous irrigation with antiseptic solutions. If improvement is not prompt, however, then amputation should be resorted to immediately. In amputating the incision should be placed and the amputation performed to suit as nearly as possible the requirements of the individual case. The idea of a provisional amputation as pointed out by Keen should be kept in mind with the idea of a secondary operation to fashion a good stump later. In these cases amputation through the sight of the fracture or the joint is usually the procedure of choice. Amputation through the thigh in cases of infection in the leg he considers rarely justified, unless the physical signs indicate that the infection has passed well above the knee joint and there is considerable damage to the joint. In cases where gangrene is well established it is only a question as where to amputate. The incision should be well above the diseased area, the muscles being the guide as near as possible. Whenever possible more or less flap should be made. The point of greatest importance, however, is to act in these cases and act immediately. One hour's delay in a rapidly developing case of gas bacillus infection may spell disaster for the patient.

With the serum treatment in gas bacillus infections the author has had no experience. The studies carried out

along this line of treatment during the war were extensive, however, really beneficial results seem to be doubtful.

Following is the description of two cases recently observed and treated by the writer, and which I believe typify the common type of gas bacillus infection as described by Binnie:

Case I. T. C., age 53, white, male.

Patient admitted to the surgical ward of Bryn Mawr Hospital suffering with a compound, comminuted, fracture of the right Tibia and Fibula about the junction of the middle and lower third of the shafts. The patient was in an unconscious condition. The injury was received about two hours previous to admission, in a runaway accident. The patient was thrown from a load of hay, the right leg was caught between the frame of the wagon and the wheel, and he was dragged quite a little distance through wheat stubble.

The family and personal histories were essentially negative.

Physical examination—Fairly well nourished, elderly man.

Head and Neck—A few abrasions and scratches over the skin of the face. Pupils equal and react normally to light and accommodation. Tongue coated; teeth in bad state of repair.

Thorax—Heart, lungs, and mediastinum apparently normal.

Abdomen—Negative.

Extremities—Compound, comminuted fracture of the right Tibia and Fibula at junction of middle and lower thirds.

Pulse, at dorsalis pedis artery—Good.

Treatment—Immediately after admittance the wound was cleansed and the edges trimmed. Fragments of torn muscles removed, the wound was swabbed out with iodine, drainage instituted, the bones set, and the leg placed in a fracture box. Stimulative and supportive measures were carried out in order to minimize shock. Fifteen hundred units of antitetanic serum were administered.

Course—On the evening of the second day the patient's temperature reached 103 and was gradually rising.

He complained some of the leg and there was considerable swelling of the tissues around the wound and some lividity of the skin. The patient's general condition, however, seemed very good and no great apprehension was felt about him. At 9 a. m. on the third day the leg was greatly swollen and there was a peculiar dusky violet discoloration of the skin of the leg extending half way up the thigh. Crepitation was present in the tissues and there was a peculiar acrid odor to the parts. Diagnosis of gas bacillus infection was made. In the hour or so which passed while preparations were being made for the operation an appreciable extension of the process could be seen. Multiple, long incisions were made in the thigh and leg exposing the muscles. The leg was placed in a Thomas splint and suspended by means of a balkan frame. The wound was irrigated frequently with hydrogen dioxide. The patient's temperature gradually dropped and ranged from normal to 100 for about four weeks when it remained normal. The patient's general condition improved accordingly, and the wound healed nicely.

Laboratory examination:

Urine—Negative.

Blood—RBC 4,500,000; WBC 10,000; Polymorphonuclears 65%; Lymphocytes 35%; Eosinophiles 0; Basophiles 0.

Blood Wassermann—Negative.

Culture for Gas Bacillus—Positive.

X-ray Examination—Showed bony fragments in fairly good position following reduction.

The patient was discharged from the hospital, after four and one-half months, in good condition. The incisions had healed and there was fairly good union of the bony fragments. There was still, however, a discharging sinus at the site of the fracture. This was curretted after a few weeks, and a small piece of bone removed, after which the sinus healed.

Case II. D. C., age 34, white, male.

Admitted to the Wilkes Hospital on September the 21st, 1923, about 4 p. m.

Discharged October 25, 1923.

The patient was admitted to the hospital with a badly mangled right leg which injury he sustained about five hours before when the leg was caught accidentally in the wheels and belt of a planer at a saw mill. He was whirled through the air during the accident striking the head and receiving a severe wound of the scalp also. He was immediately rushed 45 miles to the hospital. When admitted he was in a condition of extreme shock. The temperature was subnormal, the skin pale and extremely moist, pupils were somewhat dilated, and the pulse around 160. The hemorrhage from the wound had been free as was shown from the amount of blood in the bed clothes. A touriquet had been placed around the thigh which was partially effective in controlling the hemorrhage. Upon closer inspection of the wound I found a compound, comminuted fracture of the right Tibia and Fibula in the middle one third, a forward dislocation of the head of the Tibia with a large wound in the skin and subcutaneous tissues over the popliteal space, and another large wound in the skin and muscles over the calf of the leg somewhat above the site of the fracture. There was also, a scalp wound over the right parietal region about three inches long and through all layers of the scalp. The pulse of the dorsalis pedis artery was in evidence.

On account of the extreme condition of shock nothing was attempted except hemostasis, and cleansing of the wound and the application of tinct. of iodine. The wounds were dressed, the patient put to bed and given treatment to combat shock by means of infusions, morphine, and general supportive measures. After a few hours he had reacted favorably.

The patient's family and personal histories were essentially negative.

On the morning following admission to the hospital the patient's condition was much improved generally. The temperature was 100, pulse 110 to 120

and good quality. The foot and leg had a fairly good color and the pulsation of the dorsalis pedis artery could be felt distinctly. It was decided to reduce the dislocation and set the fracture with the hope of saving the leg and to repair the wound further. This was done under ether anaesthesia, great care being taken not to injure the popliteal vessels during the reduction of the dislocated knee. The wound was thoroughly cleansed again and drained freely. The color of the leg was good, the pulsations of the dorsalis pedis artery could be felt, and I felt that we would probably save the leg. 1500 units of antitetanic serum were administered at this time. The patient had reacted normally from the anaesthetic by 10 o'clock and seemed in excellent condition. He rested fairly comfortably most of the day until around 5 o'clock p. m. when the leg began to pain him considerably. I noticed that the leg was swollen quite a bit. His temperature was 101, the pulse rate 120 to 130 and at times he seemed a little delirious.

At 10 p. m. the patient's temperature was 102½, the pulse 140, he was very delirious, and the leg looked pale in color. The pulsations of the dorsalis pedis artery could scarcely be felt, and I felt very apprehensive about the patient.

At 8 p. m. on the second day when I returned to the hospital I found the patient in a very critical condition. His temperature was 101, pulse 160, the leg presented a peculiar purplish-blue discoloration which extended well above the knee joint, and crepitation was present in the tissues to a point extending half way up the thigh. Gas bubbles could be pressed from the wound. The leg was extremely swollen, the pulsation of the dorsalis pedis was gone, there was a very foul, acrid, odor from the leg, and it was obvious the condition was one of massive gangrene due to gas bacillus infection.

The leg was immediately amputated at the junction of the middle and lower one third of the femur, and well above

the disease area. The anterior flap method was used and the flap closed very loosely over rubber tubes for irrigating the wound. The patient stood the operation well and reacted normally from the anaesthetic. He was given another intravenous saline infusion and stimulative treatment started. The wound was irrigated with Dakins solution frequently.

Immediately following the operation the temperature dropped to 100, the pulse to 120, and the toxic condition with which the patient had been almost overwhelmed cleared up with remarkable rapidity. He showed scarcely any delirium following the operation. The temperature varied from normal to 101 for 18 days. After this it remained normal. The pulse reached normal in about one week.

On September 24th the day following the operation, I noticed that there was some discoloration of the skin along the outer side of the stump for four or five inches. There was no crepitation. The stitches were removed immediately and the discoloration extended no further. The wound healed steadily and by the 17th of October it was perfectly clean. A secondary repair was done and no further trouble ensued. The patient made a complete recovery with a good stump and was discharged from the hospital in good condition on October 25, 1923, four weeks after admittance.

Laboratory examinations:

Urine—Negative.

Blood—RBC 4,000,000; WBC 11,000; Polymorphonuclears 70%; Lymphocytes 29%; Basophiles 0; Eosinophiles 1%.

Blood Wassermann—Negative.

No cultures were made.

Diagnosis—Compound comminuted fractures of right Tibia and Fibula with gas bacillus infection.

Patient called at the hospital on December 10, 1923, was found to be in excellent condition.

To summarize, the following points are of outstanding importance:

(I) In medical literature there is considerable difference in opinion as to the classification of cases of gas bacillus infections both from a bacteriological and a clinical standpoint and the relative importance of each class of cases as regards the prognosis.

(II) Too much importance cannot be attached to the prophylactic treatment of infected wounds and every severe wound should be considered a potential case of gas bacillus infection.

(III) Every case of suspected gas bacillus infection should be watched closely and observations recorded hourly in order to facilitate early and radical treatment.

(IV) With the first signs of a developing gas bacillus infection there should be no hesitancy in instituting radical treatment. The condition should be considered one of the greatest of surgical emergencies. To wait for lines of demarcation is to expect the impossible, and will inevitably seal the doom of the patient.

Read before the Eighth District Medical Society at High Point, N C., on May 15, 1924.

ABSTRACTS.

By Leigh F. Watson, M.D., Chicago

August 2, 1924.

Dear Doctor:

I am enclosing a few short abstracts of papers I have published recently in *The Journal of the American Medical Association*, *Annals of Surgery*, *International Clinics*, *New York Journal and Record*, *Southern Medical Journal*, etc.

I hope you may find one of these suitable for use in your *Journal*, subject to any revision you may care to make.

Yours sincerely,

L. F. WATSON.

Jack-Knife Position After Hernia Operations—The posture of the patient after an operation for hernia is usually neglected. If surgeons realized that

they could reduce their recurrences materially, besides adding to the comfort of their patients, the jack-knife position would become a matter of routine for inguinal, femoral, umbilical and ventral hernias which presented difficulties in closing the fascial layers.

In inguinal hernia operations the best exposure is obtained by keeping the thigh extended until the deep sutures are ready to be tied, when it should be elevated, abducted and rotated inward. This reduces the distance between Poupart's ligament, the internal oblique and conjoined tendon from 25 to 50 per cent., depending on the size of the opening, the variety of hernia, and the development of the muscles. After the patient is returned to bed his knees and shoulders should be elevated 25 to 45 degrees by means of pillows and a back rest. This position takes the strain off the stitches during the process of repair, permits a broad firm union of fascial flaps, and reduces the percentage of recurrences. The jack-knife posture should be maintained as long as the patient stays in bed.—Leigh F. Watson, *Annals of Surgery*, August, 1924, 1xxx, p. 239-241.

Paraffinoma of the Vas Deferens—

The author reports an unusual complication following the paraffin injection of an inguinal hernia by a charlatan. The hernia promptly recurred and the cord and testicle on the side treated became swollen, painful and tender on pressure. At operation paraffin masses were removed from the internal oblique muscle, the conjoined tendon, and the vas deferens. The vas was occluded and it was necessary to resect it and anastomose the ends.

Because of the high percentage of recurrence following operations for "paraffin hernia" the regular Bassini operation was combined with the author's method of lateral displacement of the cord. With the cord displaced on to the internal oblique, 1-2 inch to the inner side of the deep suture line, the overlapped fascial flaps were securely stitched to the deep suture line to reinforce the weak spots, the usual points of recurrence—the internal ring, the lower end

of the incision over the pubic bone, and the line of deep sutures.

The serious accidents that sometimes follow paraffin injections of hernia are: Gangrene of the skin; injection of cord structures; wounding of intestine, appendix, or bladder with the needle; injection into blood vessels, followed by pulmonary or cerebral embolism or sudden blindness from plugging of the artery of the retina, and occlusion of the iliac or femoral artery, with gangrene of the extremity necessitating amputation.—Leigh F. Watson, *Journal of the American Medical Association*, 1924, lxxxii, June 14, p. 1935-1936.

Gastrointestinal Symptoms and Epigastric Hernia—Hernia in the linea alba has often been confused with gastric and duodenal ulcer, and sometimes the two conditions exist at the same time. The presence of a tumor or slitlike opening in the linea alba, with or without the protrusion of a small mass on coughing, will help to establish a diagnosis of hernia.

In ulcer the symptoms come on at a certain interval after eating, while in hernia the paroxysmal attacks have no relation to meals but usually follow physical exertion, and the patient finds the most relief is secured by assuming a doubled up position, which relaxes the linea alba—when the omentum slips back into the abdominal cavity the pain disappears. Epigastric hernia must also be distinguished from cholelithiasis, cholecystitis, gastralgia, gastritis, carcinoma, sarcoma, appendicitis, nephrolithiasis, abscess or tumor of the abdominal wall, and the gastric crises of tabes.—Leigh F. Watson, *New York Medical Journal and Record*, April 16, 1924.

Dangers of Taxis in Strangulated Hernia—Taxis is little used at the present time because of its dangers and the fact that there is a much lower mortality rate if operation is performed as soon as the diagnosis is made and without attempts at manual reduction. Contrary to the general opinion, if the hernia cannot be reduced in five minutes by moderate pressure, it is inadvisable to continue taxis longer. Taxis is aided in

infants, children and adults by suspending them by their feet, head downward.

Taxis is contraindicated when the hernia has been down several hours; when the onset is acute and the symptoms severe; when previous attempts at taxis have failed; when the hernial coverings are edematous; when there are symptoms of prostration and shock, and when there are signs of ulceration and gangrene.

If taxis is apparently successful the patient is not out of danger for several days and should be watched carefully for symptoms of reduction "en masse," hemorrhage, and delayed perforation of the intestine.—Leigh F. Watson, *International Clinics*, 1924, vol. 2, s. 34, p. 217-219.

Hernial Tuberculosis—The diagnosis of hernial tuberculosis is seldom made except at operation unless lesion exist elsewhere, such as in the abdominal viscera, peritoneum, genital organs, spine, bones, joints, lungs, or meninges. The outlook is ordinarily grave because the patient often dies from the primary lesion. In children a congenital tuberculous hydrocele is often mistaken for a simple hydrocele. If the tuberculous hernia contents are thoroughly exposed to the air, improvement generally follows and sometimes healing of the local condition. Peritoneal tuberculosis is nearly always present also and should be dealt with through a second incision. In addition to the operative treatment, the usual measures employed to combat tuberculosis are necessary.—Leigh F. Watson, *International Clinics*, 1923, vol. 1, s. 33, p. 230-235.

Strangulated Hernia Complicated By Perforation of Afferent Loop—Delayed perforation of the intestine after an operation for strangulated hernia is more frequent than is generally supposed, and death from this cause is usually explained as being due to leakage around an anastomosis or to infection at the time of operation. The symptoms of perforation may not appear for several hours or days after operation. The only way to avoid this unfortunate complication is always to examine thoroughly the distended afferent loop for a dis-

tance of one to two feet beyond the point of strangulation for raw spots, ulcerated areas and minute perforations.

Suspicious patches of gut, if small, should be covered with an omental flap; if large and of doubtful viability, the loop can be brought out of the wound and treated expectantly. If the intestine is gangrenous it should be resected. When symptoms of peritonitis suddenly develop after an operation for strangulated hernia a prompt exploratory laparotomy is indicated. The rent in the intestine must be found and closed, the wound drained, and the patient placed in the Fowler position and treated for peritonitis.—Leigh F. Watson, *Southern Medical Journal*, July, 1924, xvii, p. 531-532.

Prevention of Postoperative Hernia—

A muscle-splitting incision should be used when possible. In long incisions muscle fibres must not be sacrificed needlessly, and the motor nerves must be saved. The fascia is the strongest structure in the abdominal wall and it is very essential to close it properly. It is frequently under tension and unites more slowly than muscle tissue; for this reason it is necessary to overlap each layer separately. When closure under tension is unavoidable, the patient's shoulders should be kept in a semi-reclining position and the knees elevated on pillows (the "jack-knife" position) for a week after operation. Tension or stay-sutures are valuable to prevent strain on the fascia stitches. A gain in weight after operation, especially in obese subjects, should be avoided because it increases intraabdominal tension and weakens the abdominal wall. The use of an elastic belt checks the tendency to rapid accumulation of fat.—Leigh F. Watson, *Northwest Medicine*, April, 1924.

Bladder Injury During Hernia Operations—Large, irreducible, or strangulated hernias often present unusual difficulties, sometimes taxing the skill of the most experienced operators. The danger lies in accidental injury to the bladder, intestine, blood vessels or vas deferens. The bladder is involved in about 1 per cent of all inguinal hernias

in adults. In certain cases, it is only by a most careful examination of the sac that bladder injury can be avoided. Bladder wall should be suspected when the sac is thick, when it is covered by a quantity of lemon-colored properitoneal fat, or when there are numerous blood vessels on its surface. When the bladder is in the sac wall, it is nearly always on the inner side, and for this reason the sac should always be opened at a thin white point on the outer side.—Leigh F. Watson, *American Journal of Surgery*, April, 1924.

Hernia Following Appendectomy—

The usual causes of this hernia are postoperative suppuration in the abdominal wall; the use of drains that are larger than necessary; a faulty closure of the muscle and fascia layers; the division of nerves supplying the muscles; and the use of the wrong incision. The McBurney incision gives the lowest percentage of postoperative hernias.

An elliptical incision should be used if the sac is thin and adherent to the skin; if the sac is not adherent, a vertical incision saves time. Nothing is gained by opening the fundus—the adhesions here often make it difficult or impossible to reach the neck of sac—and time is saved by beginning the dissection at the neck and working inward. The author found that the simplest method of exposing the hernial opening is to invert the sac on one or two fingers, and feel the sharp fascial edge which is usually most distinct on the outer side of the hernia near Poupart's ligament. With the finger as a guide, the incision is made directly down to the fascia. The abdominal wall should be reconstructed as well as possible; and the muscles and fascia used as a single flap which is brought down and broadly overlapped by a second flap secured below from the external oblique aponeurosis.—Leigh F. Watson, *Chicago Medical Recorder*, March, 1924.

SOUTHERN MEDICINE AND SURGERY

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"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

Doctors are Responsible.

This month many thousands of children will enter, for them, a new world—a new life. They will begin school. Of course many other thousands will return to school under new environments but now our thoughts are directed to the very beginners. We are thinking, doctor, of that child who first breathed the breath of life in your hands and whose parents have turned to you on every occasion since that time, for your advice and ministration, for slight ills or serious sickness. These parents have trusted you and they trust you now, implicitly, wholly and sometimes blindly. The responsibility has been yours to, as it were, deliver that child at the schoolhouse door this first morning physically fit to undertake this new life. Then there is that other child which perhaps you personally have never seen, and here too, the responsibility is yours. Is that child fit to start to school? The health standards of every community are set by its medical men. You and your fellows are responsible for the physical condition of your children and if you allow children to reach school age and start to school, in your community, with remediable defects which will handicap them, you are culpable. Such children, however hard they may try, will never measure up to what they would had they been physically fit. Furthermore, every grade they repeat costs many dollars of your people's money paid in taxes.

If you fail in the duty you voluntarily

accepted when you accepted your diploma and your state license and you let a defective child remain defective until the time when the law compels him to go to school it is truly very serious.

During the past several weeks it has been our privilege to examine most carefully and intimately a good many hundred school children in a good many different communities. The first 25 children examined in any community is sufficient to give a much more dependable estimate of the medical profession of that community than by attending a meeting of their county medical society. "By their fruits ye shall know them."

Strange to say, the child that has been looked after invariably speaks with reverence and affection of his doctor. The neglected child is more than apt to say, "old Doc Blank." The reason for this is not that small pox and typhoid vaccination, tonsilectomy or being sent to a dentist, per se, inculcates love for the one who does it, but the one who does things like that is one whose character and disposition commands love and respect. The one who does not has a character most likely to be considered lightly if not actually ridiculed. Children tell the truth and children have an intuition that is hard to fool which tells them who to love and trust.

Then besides all this, these children starting to school today will either make or break the state tomorrow. The very existence of the state depends on them. The responsibility of caring for them belongs to the parent. The responsibility of advising the parent belongs to you. If you fail, the parent fails. If the parent fails then the state in very self-protection must do what the parent has not done. If then the state does what it is forced to do because of your failure will you be cowardly enough to start "hollerin" in "state medicine."

The people do not want "state medicine" and the state has plenty to do already, but the people do want certain things done. They are asking the doctors to properly fit their children for school and for life. If the doctors,

who are first given the opportunity, fail then the people will seek some other means. If the term "state medicine" happens to describe that other means, then who is the cause of state medicine.

Microscope and Telescope.

Evolution is the unfolding of events in logical sequence. The evolution of medicine from the days of so-called empiricism to its present approach to an exact science is so wonderful that it becomes an outstanding feat of the ages. So wonderful that it tends to foster the feeling of elation and tickle the ego. So wonderful that it has bred a feeling of dogmatic cock-sureness bordering on intolerance.

This accumulation of knowledge has inculcated a passion for research until research has become almost an obsession—along some line. It is popular to delve into the mysteries of the unknown and bring to light more knowledge. So much knowledge has accumulated that great monuments of it have been erected to myriads of research workers. Of what value however, is this exceeding knowledge if practical use is not made of it?

The "microscope" typifies that research which has accumulated such a deal of knowledge that most of us, at least many of us, are too short sighted to fully utilize it and we should therefore invoke the aid of a telescope. Research in the direction of making practical use of the knowledge gained in the laboratory should become as much an obsession as any other research. We should not make less use of the microscope but the medical profession needs more telescope. The final goal for which we strive is only attained to the extent to which we make practical use of what we know, and only as this has been done has medical science made progress.

The history of the ages shows that the greatest obstacle in the evolution of the science of medicine has been the medical profession itself. Who was it that ridiculed Harvey's circulating blood and Koch's bacterial life? Who put

anesthesia on the shelf for half a hundred years? Who today throws tacks along the highway of progress in many lines of altruistic endeavor?

Generally speaking, people are more willing to accept efforts made in their behalf than doctors are to permit them. Not all doctors, to be sure, but scattered here and there are doctors who need a telescope.

Any organization, whether civilian or official, that is actually getting results in its efforts to make practical use of common knowledge, by removing the handicaps of the sub-privileged child, or fighting the ravages of tuberculosis, or in whatever line its efforts may be directed, should be able to depend on the unfailing moral support and unselfish council of medical men.

Where this is not true, even though it is a group of doctors that seem to join in protest, it will usually be found that the personal, short-sighted selfishness of a dominating individual is the "fly in the ointment." The same fly, no doubt, that made our forebears harass any and every new or young doctor that came to town; a green fly of jealousy that has invariably infested with maggots the short-sighted one who harbored it.

Upon the ears of such a one will ever ring the cries of a trusting people whose suffering has been continued by obstructions placed by them in the way of progress.

With all the laudable research for knowledge it should never be forgotten that a telescope is equally as important as the microscope.

SURGERY

A. E. Baker, M. D., Dept. Editor

Our conception of the etiology of diseases has undergone a great change in the last few years. No longer have we a favorite prescription to offer, but instead we look for a focal infection which is so often the cause of one's ill health. To emphasize this important subject, I offer an abstract of J. B. Deaver's paper

on "Focal Infection Within the Abdomen," in which he states:

"That foci of infection occurring in the tonsils and sinuses, the teeth, the prostate, the deep urethra, the seminal vessels, and the fallopian tubes may lead to general disturbances has long been recognized. To these foci the abdominal surgeon adds the appendix, the gall bladder, and the bowel.

"Chronic appendicitis is the most common surgical condition found in the abdomen. The chief symptoms are periodic pain in the right iliac fossa and tenderness. Cases with visceroptosis and nervous instability are usually not surgical.

"The appendix and gall bladder, which are sacs with only one opening, may be called the diverticula of the alimentary canal. The tissues of the appendix closely resemble those of the tonsil. Infection in the interstitial tissues of these organs is apt to persist.

"Chronic colitis and occasionally mucous colitis may have their original in continued infection in the appendix or gall bladder. Chronic pancreatitis also may be the result of an old chronic cholecystitis.

Appendicitis and cholecystitis may lead to cardiac disease. Lichty believes that in appendicitis, cardiac disease is functional, while in cholecystitis a true myocarditis may result. In such cases removal of the appendix or gall bladder is necessary to relieve the cardiac condition.

"Cholecystitis and appendicitis may lead also to clitis, synovitis, and arthritis. The author recommends a routine appendectomy and examination of the gall bladder in operation for peptic ulcer as he believes a chronically diseased appendix is often the focus from which peptic ulcers arise.

The bowel may act as a focus from which bacteria may enter the blood stream and form distant lesions. Usually constipation and stasis are best treated medically unless the cause is a kink or mechanical lesion.

"In the differentiation of acute pyelitis from appendicitis or cholecystitis a careful urinalysis, cystoscopic exami-

nation, and X-ray examination should be made. If then the diagnosis remains doubtful, it is best to perform an appendectomy immediately under nitrous oxide anaesthesia.

"The fallopian tubes are often the source of tuberculous peritonitis."

In conclusion, Deaver urges that the same consideration be given abdominal foci of infection as is given the visible foci elsewhere.

Charles H. Mayo, Rochester, Minn. (Journal A. M. A., Aug 23, 1924), is convinced that the appendix undoubtedly is the source of chronic infection in the upper abdomen, and, as a rule, should be examined and removed during operation on the gallbladder or on ulcers of the stomach or duodenum. If, in examination of the abdomen before operation for pathologic conditions other than appendicitis, the appendix is found to be much more seriously diseased than the symptoms had indicated, or if in operations on the chronic diseased appendix the condition is found to be much more extensive and serious than was expected from the symptoms, the appendix should be considered a possible focus of disease involving the upper abdomen, and the exploration should be extended to this region by increasing the length of the incision, which is possible if it is a right median rectus incision. So far as the patient is concerned, if he is chronically sick from gastric trouble with pyloric spasm, even if it is the result of reflex action from disease of the gallbladder or appendix, he is entitled to relief and the greatest degree of permanent relief is usually best attained by surgery. If operation fails to confirm supposed disease of the gallbladder or ulcers of the stomach or duodenum, the appendix should be examined, as it may be the offender.

Gynecology and Obstetrics

Robert E. Seibels, M. D., Dept. Editor

Abdominal Binder As a Substitute for Pituitary Extract in Second Stage of Labor.

Alfred C. Beck, Brooklyn (Journal A. M. A., Sept. 6, 1924), has for several years used the almost forgotten abdominal binder as a substitute for pituitary extract in the second stage of labor. In a search of the literature of the last seventy-five years, he was unable to find more than an occasional brief discussion of its use. It is not mentioned in most of the modern textbooks. Thirty years ago, however, the American Text Book of Obstetrics, in discussing the management of the second stage of labor, stated that: "an abdominal binder is frequently useful in helping the progress of labor during the second stage, particularly in multiparas having lax abdominal walls." The binder is made in two parts. The upper section is a piece of canvas, 29 inches long and 13 inches wide, to each end of which are attached five rings. This is sewed to a cotton flannel lining that measures 50 by 13 inches. The lower portion likewise is canvas. Its sides terminate in five tails, at the bases of which are attached five buckles. Part A is placed under the patient, and the cotton flannel ends are crossed over the abdomen. Part B is then laid over these, and the tails are passed through the rings on Part A, and fastened by means of the buckles at their bases. Thus, this type of binder can be snugly applied to the abdomen of a woman of any size, and can be tightened or loosened as the case requires. When properly adjusted, it holds the uterus perpendicular to the pelvic inlet and prevents distention of the weaker parts of the abdominal wall, thereby increasing the intra-abdominal wall, thereby increasing the intra-abdominal pressure and making the bearing down efforts more effective. The last 250 preimparous deliveries in Dr. Beck's service, in which the use of an

abdominal binder is a routine measure, were compared with 250 similar cases in which no binder was used, in order that the value of this measure might be learned. In the binder series, the average length of the second stage was 68.7 minutes, while it was 101.6 in the other series. The abdominal binder also diminishes the need for forceps. In fact, the number of forceps operations in the binder series was only slightly over half that in the other. Forceps were required nineteen times in the 250 primiparous labors in which a binder was used, while thirty-five forceps operations were done in the 250 in which a binder was not used. The binder, therefore, not only diminishes the number of cases in which forceps are necessary, but also almost eliminates the need for difficult forceps operations. By shortening the second stage and lessening the need for forceps, particularly midapplications, the infant mortality was diminished. Twelve infant deaths were noted in the 250 primiparous labors in which the binder was not used, against eight in the 250 in which it was used. When border-line dystocia exists, the use of a binder frequently is of great value. Unlike pituitary extract, it tends to prevent rather than cause rupture of the uterus in these cases. The binder likewise is of great value in multiparas with relaxed and pendulous abdomen of marked obliquity of the uterus. Here, it not only causes an increase in the intra-abdominal pressure, but also, by holding the uterus perpendicular to the pelvic inlet, prevents interference with the normal mechanism of flexion. The aid furnished by the binder also permits us to use more anesthesia and makes possible a painless second stage in the majority of cases. The aid furnished by the abdominal binder is passive. It therefore is of no value if the patient is too tired to use her voluntary efforts. The increase in the intra-abdominal pressure may affect the child. After each uterine contraction, the lower strap is loosened in order that the fetal heart may be auscultated. If the progress is too rapid, as frequently is the case in the latter part of the second stage, exten-

sive lacerations may occur. Removal of the binder readily corrects this difficulty.

Report of a Case of Early Rupture of Fetal Membranes.

Mildred Van Cleve, Macomb, Ill. (Journal A. M. A., Aug. 23, 1924), reports a case of pregnancy in which rupture of the fetal membranes occurred at about the twenty-fifth week of pregnancy. The patient was awakened at night by a sudden gush of colorless fluid from the vagina, unaccompanied by pain, after which time a little fluid dribbled from the vagina almost constantly, especially on exertion. At the eighth month, the patient had two hemorrhages, the first lasting two days, followed in a week by another lasting one and one half days, the flow being somewhat more profuse than that of the menstrual periods. Temperature, pulse, urine, blood pressure and pelvic measurements were normal. Abdominal enlargement was less than is usual at seven months; the feets was small and easily mapped out; there was breech presentation; the movements were vigorous, and loud fetal heart tones were heard just below the umbilicus, at a rate of 140 a minute. There was a slight watery discharge from the vagina, without color or odor. Vulvar and vaginal tissues were moist and slightly edematous. The cervix was enlarged, edematous and boggy, and the external os was patulous; no placental tissue was felt, a foot presenting. Four days later, labor began and terminated in a breech extraction (footling) of a living male infant weighing 5 pounds (2.3 kg.), slightly asphyxiated, but readily resuscitated. There was no evidence of amniotic adhesions, and no infection of cord, umbilicus or endometrium. The pregnancy began within a few weeks after an abortion, and was also complicated by a slight premature separation of the placenta.

Orthopaedics

Alenze Myers, M. D., Dept. Editor

The Parham-Martin Bands in Fractures of the Long Bones.

E. B. Mumford's paper of March, 1924, summarizes the advantages in the use of the broad metal band which he has noted in his experience as follows: (1) The simplicity, ease and rapidity of application. (2) The slight amount of traumatism to soft and bone tissue. (3) The band seldom has to be removed. (4) It can be applied to any type of fracture, the Collins band being substituted for the Parham-Martin band in cases of transverse fracture. (5) It does not prevent the formation of good, firm bony union. (6) It can be used in fractures complicated by infection or by syphilis. (7) It can be used at any age of the patient. (8) It will give such firm fixation of the fragments that extension is not necessary and motion in the joints can be begun at an early date. (9) The firm fixation makes it almost "fool proof" so that the after-treatment and care are not so tedious.

A Straight Limb in the Treatment of Pathological Condition of the Knee-joint.

C. A. Parker (Jour.-Lancet, January 15, 1924), says that the use of fixative measures in complete extension for practically all acute and chronic inflammatory affections of the knee-joints is now well established. However, many bent knees exist and need correction. In the non-tuberculous cases he has not hesitated to use force, under anesthesia, especially in the tender knees and in older people who will not attempt at straightening. Immediate correction seems best for them. A straight leg is the object sought; motion may or may not develop. If there is some cotion present, correction can usually be made by manual force—if not at one time, then by a series of gradual efforts. If the ankylosis is bony or densely fibrous or if it is an old tuberculous joint, a

bone operation is usually indicated. It is safer to do this work away from the site of the joint infection, particularly after pyogenic and tuberculous infections. The simplest method, and one fitting the largest number of cases, is the resection of a transverse wedge, apex posteriorly, from the front of the femur just above the epiphyseal line. The complete extension may have to be done in stages when immediate correction would interfere with the circulation or nerve supply of the parts below. Not only must the knee be corrected, but it must be maintained fully extended, and not flexed 15 to 20 degrees, which helps very little in shortening the leg or in keeping it out of the way when the person is sitting. In the occasional case, where the leg is long, a thicker sole may be put under the other foot.

Hospital and Sanatorium

John Q. Myers, M. D., Dept. Editor

I Am.

The man who signed your Birth Certificate and the man who will sign your Death Certificate. I stand by you in the hour of greatest happiness and the hour of greatest sorrow. I listen to your confessions not breathed to another soul and keep them inviolate.

My life work is consecrated to serving and administering to your physical wants. Night or day, rain or shine, I am at your beck and call. I sacrifice my rest, my pleasure, my strength, to comfort you.

As I wend myself past the year stones of life toward the Eternal Sunset I am striving to be more charitable, more unselfish and more kindly toward Fellow Men.

I am the first one you think of in times of sickness and the last one thought of in times of health.

I am not rich because I serve Suffering Humanity, which embraces the poor whom we have with us always.

I am the man who cannot pay his grocery bill, his dry goods bill, his drug bill, or in fact, any bill on earth, until I am paid by you, I am,

Your Family Doctor.

Mental and Nervous

James K. Hall, M. D., Dept. Editor

Infection Against Insanity.

The condition referred to by the general term insanity probably constitutes the chief health problem in this country. It constitutes, also, an enormous economic situation. For these two reasons, and for other reasons, theories continue to be put forward in explanation of the causes of mental disorder. Perhaps it is true that almost all cases of insanity can be brought within two groups. There are psychoses, or mental upsets, that are apparently the mental reflection of underlying physical disease. Syphilitic infection, especially in chronic form is undoubtedly responsible for 12% or 15% of admissions to state hospitals. Influenza, typhoid fever, and septic infections often cause disorder of mind. The other groups of mental disorders would embrace all those types that do not result from disease of some part of the body. Until our knowledge of the chemical constitution of the fluids and the other secretions of the body is more complete it would seem to be necessary for us to assume that mental disorder may arise independent of underlying organic disease. In other words, it would seem to be possible for an unsound mind to exist in a sound body. The psychoanalysts believe that most cases of mental disorder are of psychic and not of physical origin.

Disease of the body is certainly much more easy of treatment than disease of the mind. We are all materialistic in our philosophy. Daily observation teaches us that matter can bring about changes in matter. The plough changes the appearance of the surface of the field. Road-building machinery makes a smooth surface out of a rough surface. Skilled labor in charge of proper machinery fabricates a house out of crude material. But the effect of mind upon mind is not so easy to understand.

Napoleon had overpowering effect up-

on the minds of many of his fellowmen. He controlled their thought processes and in that way their bodies and their movements. So, also, did Patrick Henry, Jefferson, Lee and Jackson. It is difficult to understand the influence of a magnet over steel: still more impossible to grasp the moving and controlling power of the sun over the bodies scattered throughout space. It is utterly impossible, however, to get hold of any understanding of the ability of one human mind to dominate another, yet that very fact is the commonest occurrence in life. Such an influence gives to the hero his place in history and to the quack his temporary success.

Treatment of so-called mental disease must be directed to some part of the body or to the mind itself. It is reasonable to suppose that even a mind in disorder will function better in a body kept in good trim than in a body weakened by starvation or twisted and warped by disease and pain. For these reasons it is necessary for state hospitals to give careful attention to the bodies of insane patients, and to provide them with an environment as pleasant and as wholesome as possible. That constitutes both somatic and psychic treatment. If the cause of the mental upset be physical disease it is reasonable to suppose that cure of the organic disorder will bring about restoration of normal mentality. Such recoveries are constantly taking place.

In *The Journal of Nervous and Mental Disease* for August of this year, Dr. Alfred Gordon of Philadelphia considers the beneficial effect sometimes noted in a mental disorder which would seem to result from the development of some physical disease in the same patient. All asylum physicians know, for instance, that the maniac is apt to become more placid and sensible during an attack of pneumonia; a septic infection seems not infrequently to bring about a stimulating mental reaction with lessened mental suffering in a melancholic. Sometimes an accident causing a broken bone or loss of blood seems to make an insane person mentally better.

Such observations as some of those noted above have resulted in the treatment of paresis, for example, by the setting up of a malarial infection through the injection of malarial parasites. The assumption is that the malarial parasites bring about changes in the patient's blood that are inimical to the syphilitic parasites. Dr. Gordon discusses the problem of fighting so-called insanity through the medium of infection of the physical being. It would not be impossible to understand how infection accidentally intercurrent or deliberately injected into an insane person might restore the mind to normal if it could be definitely established that the mental disorder was due to infection of some portion of the body. It would be a matter of fighting fire with fire; making successful war upon a toxin by an antitoxin. Dr. Gordon cites a number of cases out of his own experience and from literature in which mental improvement, or even recovery, took place after some sort of accident or some kind of infection. Even in a mental disorder of supposed psychic origin it is not impossible to understand how disease of the body might be helpful to the condition of the mind by bringing about a change in mental focus from the immaterial to the material—from a depressing series of thoughts to a pleuritic or a pneumonic pain. Once I saw an elderly man who walked unsteadily and with difficulty and fear between two canes abandon them suddenly and lead a foot-race to a burning building. He worked heroically in removing furniture from the doomed house, but—he had to be taken back to his room in a rolling chair.

Dr. Gordon's article is entitled "*The Influence of Intercurrent Diseases Upon the Course of Certain Psychoses.*" It is decidedly well worthy of careful read-

ing.

Pediatrics

Frank Howard Richardson, M.D., Dept. Ed.

Last month's pediatric editorial called renewed attention to the menace of scarlet fever, and discussed its incidence, and its control after it had developed. This month we shall discuss the far more interesting and intriguing phase of scarlet fever that is now occupying the attention of so many experimental workers, and that bids fair to greatly increase the range of preventive pediatrics—the prevention of the disease.

Some time ago, two workers, Caronia and Sindoni, actively immunized children by vaccinating them with killed cultures of a streptococcus. Takahashi, of Tokyo, by injecting five of his own children subcutaneously with the blood of a scarlet fever patient, actively immunized them, as he demonstrated by later swabbing their throats with material taken from the throat and blood of a scarlet fever patient. And now, as a result of their work extending over a period of years, George H. and Gladys Dick announce that they have been successful in fulfilling the four postulates of Koch with regard to the specificity of a strain of hemolytic streptococci for the production of scarlet fever! They "isolated it from a case of scarlet fever; it produced experimental scarlet fever; it was isolated from the experimental disease, and again grown in pure culture. All of Koch's laws were thus fulfilled, except the one which requires that the organism be constantly present in the disease. In order to meet this requirement, it was necessary to learn whether or not experimental scarlet fever could be produced with a strain of hemolytic streptococcus that did not ferment mannite. Two volunteers were chosen. One showed a negative skin test, the other a positive. A hemolytic streptococcus that did not ferment mannite was isolated from the throat of a scarlet fever patient. A

forty-eight-hour culture of this organism was swabbed on the tonsils of each volunteer. The volunteer with a negative skin test remained well. The volunteer with a positive skin test developed scarlet fever."

Before discussing Dick and Dick's active immunization by means of small doses of toxin, it may be well to explain what is meant by the positive and the negative skin tests mentioned in the above quotation from their report. They announced this test last January. It is quite similar to the Schick test in diphtheria, appearing somewhat more promptly than the latter, and with some other distinctions that we need not go into here. It is enough to say that Zingher, whose enormous experience with Schick test in the public school of New York City makes him perhaps the greatest authority on this subject in the world, after working with this and thoroughly checking up on it, believes that the Dick test will be to scarlet fever what the Schick test is to diphtheria. What this will mean to the jokesmiths, when the two tests become a little better known to the laity, one trembles to contemplate!

Dick and Dick further conceived the idea that it might be possible to actively immunize with small doses of toxin similar to the immunization against diphtheria by means of toxin-anti-toxin. They found that adults could be immunized by three injections of toxin at five-day intervals, beginning with a dose equivalent to 300 skin test doses and increasing to a dose equivalent to 1,000 skin test doses. Within a week after the last dose the skin test becomes entirely negative.

The fact that Park and Zingher, who have done so much to standardize and popularize the Schick test and the toxin-anti-toxin prevention of diphtheria, have taken such an active interest in the new Dick test and the toxin immunization against scarlet fever, is of immense import to those interested in the health of the children of the land. At the Chicago meeting of the A. M. A., Zingher, after commenting most enthu-

siatically upon his results of his work along this new line, told us that he was greatly in hopes that the new protection might be combined with the present toxin-anti-toxin protection against diphtheria, so that a single series of three injections might confer immunity against both diseases! It would seem then as if even those of us who may still have been lax about bringing the possibility of securing diphtheria immunity for their children to the attention of all parents, would be compelled by sheer lack of any excuse, to urge this double protection upon those with whom they have any influence at all. Such a protection certainly does seem too good to be true.

It remains to be noted that, in a personal communication to the writer, Zingher recently stated that he hoped to be able to supply the new preventive to physicians in New York City this winter. Of course this means that the commercial houses will follow the lead of the city department's laboratory at once; so that we may confidently look forward to the addition of this priceless aid to our armamentarium in the very near future. It would hardly seem as if any one could need to urge upon the medical profession the duty of bringing this to the attention of those responsible for the welfare of the children who come under the care; but the fact that so many children still remain unprotected against diphtheria, when the efficacy of toxin-anti-toxin has been proven by the experience of over half a million school children in New York City alone, gives us ample reason for urging this manifest duty upon the general practitioner, even more than upon the children's man.

News Items

The Seventh (N. C.) District Medical Society will meet in Wadesboro, N. C., Tuesday, October 7. It will be worth attending.

A New Chair at Jefferson Medical College.

In recognition of the far-reaching developments of bronchoscopy in the diagnosis and treatment of disease of the lungs and of esophagoscopy and gastroscopy in the diagnosis and treatment of diseases of the esophagus and stomach, the Board of Trustees and Faculty of the Jefferson Medical College have created a new chair to be known as the Department of Bronchoscopy and Esophagoscopy. Dr. Chevalier Jackson, formerly Professor of Laryngology in the Jefferson, has been elected to the professorship of the new department. Dr. Fielding O. Lewis has been elected to fill the Chair of Laryngology vacated by Dr. Jackson.

Dr. Paul V. Anderson and Mrs. Alice Boatwright Anderson, both of Richmond, Va., were married in that city on August 23. Dr. Anderson is a graduate in medicine of the University of Virginia in the Class of 1904.

Dr. Henry Page Mauck and Miss Harriet Morrison Hutcheson were married at the bride's home, Rockbridge Baths, Va., September 10. Dr. Mauck is a graduate of the Medical College of Virginia in the Class of 1913 and a prominent orthopedic surgeon of Richmond.

Dr. Louis Julien Picot, Littleton, N. C., died in a hospital in Norfolk, Va., on August 14, at the age of 71. He was a graduate of the Jefferson Medical College in the Class of 1875. Dr. Picot had been president of the Medical Society of the State of North Carolina, and he was once superintendent of the State Hospital at Raleigh.

Dr. Randolph Carmichael died suddenly at the ancestral home near Fredericksburg, Va., on September 2. He was a graduate in the Class of 1894 from the Jefferson Medical College. He was one of the leading dermatologists of Washington City.

Dr. and Mrs. Stuart McGuire, of Richmond, have been spending the summer abroad.

Dr. John Fulmer Bright assumed the office of Mayor of Richmond, Va., on September 1. Dr. Bright was graduated in 1908 from the Medical College of Virginia.

Dr. Albert P. Traynham was appointed coroner of Henrico County, Virginia, on September 1 to fill the vacancy caused by the resignation of Dr. J. Fulmer Bright.

Dr. Charles C. Haskell has been awarded half of the prize offered by the American Pharmaceutical Association in appreciation of his researches in pharmacology. For several years Dr. Haskell has been a member of the faculty of the Medical College of Virginia.

Mayor Bright has appointed Dr. W. Brownley Foster Director of Public Welfare of the City of Richmond. For several years Dr. Foster has been chief health officer of Roanoke. He is a graduate of the Medical College of Virginia in the Class of 1901.

Dr. N. Thomas Ennett has been made medical director of the city schools of Richmond, Virginia. He is a graduate in the Class of 1907 of the Medical College of Virginia. Dr. Ennett is a native of Carteret County, North Carolina.

Dr. Blanton L. Hillsman has just been appointed physician to the police and fire departments of the City of Richmond, Virginia, by the new Director of Public Safety, James R. Sheppard, Jr. Dr. Hillsman is a graduate of the University College of Medicine in the Class of 1898 and he has been continuously a member of the teaching staff of that institution and of the Medical College of Virginia, with which it was combined. He was retired in 1919 from the United States Army as Lieutenant-Colonel, in which he rendered high service overseas.

Dr. William deB. MacNider, of the University of North Carolina, has lately spent a few days with friends in Richmond.

Dr. Robert L. Powell of Spotsylvania County, Virginia, a graduate of the George Washington University Medical School in 1909, was killed in that county in May of this year in an encounter with Charles Kendall. At a recent term of the court in that county Kendall was declared not guilty by a jury.

Dr. Minor Carson Lile and Miss Emma Chapin Collins, both of Seattle, Wash., were married in that city on September 4. Dr. Lile is a graduate in medicine from the University of Virginia in the Class of 1914, and he is engaged in the practice of orthopaedic surgery in Seattle.

The Children's Memorial Clinic, Incorporated, established at Eleventh and Clay streets in Richmond as a memorial to the late Dr. McGuire Newton, has been placed under the headship of Dr. Basil B. Jones as all-time medical director. The clinic was organized by men and women as a tribute to the services rendered to the sick children of the city by Dr. Newton. Its management and maintenance are carried on by a board of directors selected by the contributing and affiliating organizations. The work is entirely diagnostic. The patients are referred with a diagnosis back to the family physician or to the wards of a hospital. Dr. Jones is a graduate in the Class of 1917 of the Medical College of Virginia. For several years he was in practice in Los Angeles.

Dr. Richard W. Fowlkes, a graduate of the Medical College of Virginia in the Class of 1920, who has been devoting himself for some time to the study of diseases of the skin both in this country and in Europe, has opened offices in the Professional Building in Richmond. His practice will be limited to dermatology.

Dr. A. E. Baker, Charleston, S. C., has just enjoyed a two weeks' rest and vacation at Montreat, N. C.

Park View Hospital, Rocky Mount, N. C., announce the establishment of a separate institution for colored patients with a capacity of thirty beds. The new institution brings up the capacity of this hospital now to eighty beds. There will be in the new building for the colored, two wards of eight beds each and fourteen private rooms. The buildings are entirely separate, but connected with a covered corridor.

The Seaboard Medical Association will hold its regular annual session at Rocky Mount, N. C., December 2-3-4. A full program of pertinent papers is being prepared and a most cordial invitation is extended to all doctors whether members or not.

Speeds Their Recovery.

Physicians in charge of the Mountain Sanatorium, Hamilton, Canada, have accepted radio broadcasting as a valuable ally in speeding patients to recovery. Over 300 'phones are at patients' bedside.

MISCELLANEOUS

Five Hundred Dollars for a New Marine Hospital—Old Contribution May Some Day Be Used.

In 1878 a grateful patient or friend of the Marine Hospital Service (now the Public Health Service) donated \$523.50 "for the benefit of the Marine Hospital at Bath, Maine." The amount was placed at interest by the Collector of Customs, and is still on deposit, because there was no Marine Hospital at Bath, Maine, and never has been, the nearest ones on that coast being located at Portland, Maine, and Boston, Massachusetts.

Practically all cities in the United States are increasing in size, and the city of Bath is no exception to this rule. It is not at all improbable that the time may come when a new Marine Hospital will be needed on the Maine Coast to serve those who go down to the sea in ships, in conformity with the

Government policy established in 1798 to provide medical care for merchant seamen. Students of compound interest may compute the period necessary for the donation to grow to the necessary amount.

Marriage of First Cousins in Direct Line of Descent Through Four Generations.

The family described by Douglas P. Murphy, Rutherfordton, N. C. (Journal A. M. A., July 5, 1924), is of interest for several reasons: the large number of marriages between first cousins; the fact that four of these occurred in direct line of descent, and the striking lack of mental and physical deterioration as a result of such constant intermarriage. In the family tree presented, seven marriages took place between first cousins. Four of these were in direct line of descent. The second in direct line was a marriage of double first cousins. No physical abnormalities could be found in the entire family. Only one case of mental deviation, of mild type, was present, early in the family tree. The only pathologic findings possibly the result of inbreeding, was the high infant mortality. This mortality was higher in the families in which the relationship of the ancestors was closest. From these investigations, it is assumed that: 1. The inbreeding in this family is a cause of a decided increase in infant mortality. 2. Mental and physical deterioration need not be expected to follow the intermarriage of first cousins.

Publications Received

MEDICAL GYNECOLOGY. By S. Wyllis Bandler, M.D., Professor of Gynecology, New York Post Graduate Medical School and Hospital. Fourth Edition, Thoroughly Revised. Octavo of 930 pages, with 157 original illustrations: Philadelphia and London: W. B. Saunders Company, 1924. Cloth, \$8.00 net.

The various topics have been viewed in this book, from the standpoint of symptoms, the disease, the bimanual and microscopic find-

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ings, and the general physical and nervous state. The work deals with the non-operative side of gynecology. Operative procedures have been viewed as a last resort in those numerous conditions where medical means can usually accomplish the end. The author has shown the relation which pelvic abnormalities really bear to the physical and mental state of the female.

More than 100 pages have been devoted by its author to a discussion of the endocrine glands. The present status of this subject is thus quite accurately set forth.

PRINCIPLES AND PRACTICE OF OBSTETRICS. By Joheph B. DeLee, A.M., M.D., Professor of Obstetrics at the Northwestern Medical School. Fourth Edition. Thoroughly Revised. Large octavo of 1123 pages, with 923 illustrations 201 of them in colors. Philadelphia and London: W. B. Saunders Company, 1924. Cloth \$12.00 net.

Dr. DeLee has again revised his text book and this fourth edition is better even than

those that preceded it even though they have each in turn been recognized as the last word in the field.

The book is strongly conservative throughout for as the author boldly states, "Something must be done to stem the tide of obstetric operating now prevalent, with its resultant maternal and fetal mortality." The work is practical and is directed primarily to the general practitioner who must conduct his work either in the home or at best in a poorly equipped small hospital. The methods described and the advice given are applicable to the environment in which the very great majority of babies are born. Prenatal care has been fully discussed as its importance deserves.

The chapter on the relations of endocrinal glands to the reproductive function has been made to include the latest theories, at the same time admitting the paucity of demonstrated facts.

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Southern Medicine and Surgery

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No. 10

SOME OBSERVATIONS IN PUBLIC HEALTH ACTIVITIES.

By James M. Parrott, M.D., F.A.C.S., Kinston, N. C.

How far should the State go in offering free treatment and free preventative measures, is the question which is often asked and which frequently comes to my mind.

Before I undertake to suggest an answer or answers, it will clarify matters and things for me to define certain terms which I shall use in giving expression to my views. What do I mean by State, Society, Nation, County, etc.? In this article, by any of these terms, I mean a unite or organization of units of organized society; for instance: cities, counties, states, etc.

While disclaiming an opologetic attitude for what I shall write in this article, fairness impels me to call attention to the announced policy of our State Board of Health not to engage in certain treatment activities in any county without the approval of the local medical fraternity. I am glad to entertain the opinion that the State Board of Health and many County and City Boards of Health, while having gone too far in offering certain free treatments and certain free preventative measures for and under certain conditions, richly deserve, and will continue to receive the cordial and enthusiastic support of the practitioners throughout the State.

Now, back to the question which I propounded in the beginning. How far should the State go in offering free treatment and free preventative measures? The answer to this question is essentially and fundamentally a governmental one and rests largely on the laws of political economy and general economics. It quickly suggests and demands a definition of democracy. I believe that democracy is the mid point in the

organization of units of society between socialism on one side and anarchism on the other. So closely do its lines run with those of socialism and anarchism that no one can mark the boundaries, with accuracy. It is frequently the case that democracy, in spite of its best efforts, overlaps the boundaries of one or the other. I am sometimes persuaded to believe that it is easier to define what democracy is not than what it is. There are certain things which if done by the government are paternalistic and hence socialistic, though socialism and paternalism are not only not synonymous but are frequently the result of opposite governmental policies. On the other hand there are certain things which if done by the government, or more accurately speaking, left undone by the government, are anarchistic in effect. Under the general police regulations which are right and the part of wisdom for the common good, the State has the power to do a number of things. There are certain times when the State should and must exercise police authority, while under other circumstances but changed conditions, the State should have no right to do the thing which it formally had the right to do.

With this very brief and really imperfect statement of the fundamental principal underlying my discussion, I make bold to suggest that the State should not go further in offering free medical services or exercising preventative medical measures than are indicated, first by Restrictive Conditions in the exercise of which an individual, firm, or corporation cannot function, or has not occupied the field effectually, second by Charity and third by Education.

Restrictive Conditions: Under this head may be classed those duties which regulate or supervise, or both, such as

public sanitary regulations, inspection of food supplies, oversight of water supplies, etc. For reasons quite manifest these duties properly come within the scope of State Health Work. If regulation be not applicable by virtue of the kind of service needed or rendered, then only limited supervision should be practiced. The State should undertake to regulate, but not to own, for the common good, activities, either private or corporate, which are in the class of an enterprise which enjoys the right of eminent domain. For example: I believe that the State should have full authority to quarantine against scarlet fever, for the reason that the individual cannot protect himself from another individual suffering from scarlet fever, other than by the institution of quarantine measures. However, should an antitoxin, serum, or some other measure be developed by which the individual can protect himself, then the State should retire from the field and leave the function to the individual himself and his family physician or such other persons competent of instituting such preventative measures. Illustrating further: I do not believe that the State should occupy the entire field for the care of the insane and deformed. State activities along these lines should be limited to the charity and indigent patients and only should admit to such Institutions those who are able to pay, when no adequate provision has been made by private individuals or corporations, etc. Just as soon and as rapidly as the field is occupied by individuals, the State should retire, except in so far as regulatory duty lies. I will not extend my illustrations further in explaining the first function which I think the State should exercise in public health work, because I am sure that the illustrations which I have used are sufficient to carry the thought which I have in mind.

Charity: Society should extend help in every way to the indigent as well as the poor and the State should exercise this privilege and duty to the fullest. However, in this day and time I am much impressed with the idea that as a matter of fact there are only a very lim-

ited number of charity cases. The mantle has to be stretched, is stretched, I regret to say, a far ways, in order to make it cover a host of people who now come under its folds. The question naturally arises at this point: How far should the State go in charity and indigent work and to whom should it be extended? The answer to this question cannot be met by laying down a general statement. The problem must be solved in the county by the local people. A patient might be able to pay the small amount which is incident to half a dozen professional visits and yet be wholly unable to pay a large fee for operation. Such cases cannot be classed, in my judgment, under the general term of charity, but should be classed as charity only for special purposes and for a limited time. On the other hand, a manifest injustice would be done all concerned if the State undertook to extend charity to those who are able to pay a smaller fee or who could meet a larger operative fee at a later time or on the installment plan.

I am quite certain that it will be generally admitted that the medical profession has always been more than glad to treat, free of charge, those deserving such, or to extend such terms as may be necessary to those who may be unable to pay a full fee in a lump sum but who could do so in partial payments. I do not want to be understood as opposing charity work. I am not. I have always endeavored to do, and will continue to do, my share of it. However, frankness impels me to state just here that I am not at all convinced that organized society cannot go too far in the extension of charity along any line. On the contrary, while charity is most commendable, it can be, and sometimes is, a dangerous, or at least a damaging, thing. It cannot be denied that it is not very far from paternalism. All will admit that there is special risk, when too much charity is extended, of pauperizing the people and making them depend too much on society and too little on themselves. Coddling of individuals by society is to be deprecated. On the contrary people should be taught to

help themselves. This leads me to observe that we need more of the pioneer spirit inculcated in our people. By this I mean the spirit of self reliance. This makes for freedom of thought and the development of wholesome, old fashioned, Americanism. My independent and self reliant feeling causes me to think that it is a very safe and wise axiom, that the people are best governed who are least governed. I do not believe in subsidies for railroads, boats or individuals, whether it be in the commercial world or in the treatment of the sick.

The extension of services on the part of the State to those who are able to pay, not only pauperizes the citizens and establishes dangerous paternalistic precedents, but enormously increases the taxes of the people. We cannot turn in any direction without being faced with this tax question and we should avoid everything possible which will add to the tax burden of our people. Let me analyze and illustrate. For example: It is my candid opinion and this opinion is based on observation, that from seventy-five to eighty per cent of the people who apply to the State Tonsil and Adenoid Clinics are able to pay the reasonable and really small fee which competent specialists charge for doing this work. I seriously doubt if the State collects more than eighty per cent of even the small amount which it charges from the large number who are able to pay. It is also my opinion and I am quite sure that this opinion is well founded, that it costs the State between twenty-five and thirty dollars per child to do this work. The State charges twelve dollars and a half to those who are able to pay. A simple calculation will show the situation—a loss. It seems to me that an unnecessary burden is thus thrown on the tax payer by doing work for twelve dollars and a half for those who are able to pay full prices and who often come to the place of operation in a limousine or high priced car. It might have been said a few years ago that it was a convenience to these people, that the State owed this much consideration to them. But this excuse will not hold now because, with our good

roads, fully ninety per cent of the children in North Carolina, are within two hours ride of a competent specialist. I quote the last three paragraphs from an editorial entitled "North Carolina Tonsil and Adenoid Clinics," which appeared in the July issue of Southern Medicine and Surgery:

"A fee of twelve dollars and a half is charged for each child, however, no child is denied the operation if unable to pay this small amount. All are given exactly the same care and no one of the clinic personnel, except the one nurse who collects the fees, knows who pays and who does not.

"The sad part of it is that only one hundred in each place can get this benefit and many must go away disappointed. The query is constantly heard, 'What then will happen to little Willie Blank and little Mary Blank, that couldn't get in—they will never be able to take him or her to a specialist to have it done and he or she needs it so badly.'

"What indeed will happen to this child? This is the problem before the State which must be solved."

These paragraphs speak for themselves. The editor asks in part: "What then will happen to little Mary Blank and little Willie Blank—they could not get in?" Let me assume to answer in part. Let the rich little Willies and the rich little Marys be taken twenty-five or thirty miles away, (A capable specialist is within twenty-five or thirty miles of nearly all the people within the State), in father's car, be it limousine or Ford, (A man who can own a Ford car can pay a small fee for his child's tonsils to be removed), and pay the bill. This will give room for all the poor little Willies and the poor little Marys who will come within the bounds of any community Tonsil and Adenoid Clinic which has been held during any week anywhere in North Carolina, in my judgment. This is the solution of the problem, if such it be, which seems to worry the editor.

Illustrating further: I believe that more than sixty per cent of the anti-typhoid inoculations are administered to people who are able to pay, easily, a reasonable fee to the family physician for such services. The State receives no compensation for this work. But, someone says, by thus doing we can control typhoid fever. Yes, I agree, but I rather think that in this day and time it is up to the individual to elect whether he shall have typhoid or not, or if the individual be under age of mental accountability, to the parent, because by the simple inoculation of the typhoid antitoxin the individual can save himself the danger of attack. But in order to protect this individual is it quite fair for the public to be burdened with additional cost, the individual pauperized, and the physician, who has spent much time and money in equipping himself, be denied his legitimate source of income. I think that it is generally agreed that, in this enlightened time, society should not be taxed with the burden of quarantine for smallpox because and for the simple reason that we have reached a period when vaccination will prevent and thus one can have smallpox or not just as one sees fit. The individual should carry his own burden. No one can criticize the State for administering typhoid antitoxin to those who are not able to pay but this should not be done for those who are able to pay unless it be for educational purposes. (This does not now pertain). There is no more justification in my mind for administering treatments to those who are not indigent and not charitable, than for the State to enter into the other phases of professional activities. Recently I have noted that fees of such size as to impress me as being very large, have been paid the legal profession for protecting the property of the State and I cannot understand why doctors should be expected to protect the lives of the State at a loss or suffer loss, by the State doing so without charge. No one would for a moment, expect the State to provide legal services for anyone except paupers and the State should not provide free medical services, prevention or

otherwise, whenever the field is occupied by private enterprise, except for the protection of society, for the care, of the poor, or for the educational value of the demonstration.

In one county in North Carolina, of which I have some knowledge, the general practitioners lost nearly a thousand dollars each in possible legitimate fees, in 1923, because organized society was doing free vaccinations for people who were as able to pay for such services as they were able to pay the grocer. This does not appear to me as being the proper and correct thing and I protest.

I do not agree with the suggestion that the doctors should support the continuance or the extension of activities as I have already indicated, (I could mention other endeavors), on the ground that the State health and medical activities have increased the demand for medical services. (I doubt if it has). Such an argument does not appeal to me at all. I cannot forego my convictions for material gain. The proposition in my judgment is wrong, very wrong, and I must condemn it even should I lose.

Organized society has a great opportunity in an almost unexplored and undeveloped field in teaching preventative measures for a number of troubles which are now disturbing society and inflicting it with a constantly increasing burden. For example: Prevention of mental defections and moral degeneracy due to physical and mental defects. The maternity and mortality in the County to which I already referred, and this is a very aggressive county, especially in health matters, is as high if not higher than in any other State. Teachments in pre-natal and anti-natal work is not as spectacular and does not bring as striking results as tonsil and adenoid clinics or as vaccination campaigns, but such would do a great deal of service and would not lessen the value of the State's health activities in the least. I do not mean to detract one whit from the value of health work of organized society or to minimize its importance, rather would I magnify it. However, I am not willing to agree that all the popularity benefits of health ac-

tivities is due to the effectiveness of the organizations alone. The family doctor has labored in the field and labored without reward, newspaper notoriety, or other kind, and with a beautiful self abnegated spirit (the purest form of human altruism) for centuries and deserves some credit. Then, too, candor impels me to suggest that folks more often screen the house from flies and mosquitoes because flies and mosquitoes are uncomfortable and annoying, rather than from fear of disease. I trust that I will not be condemned as critical when I further state that the individual example of the beneficiary effect from being operated on in private by specialists and the enlightened teachments of the family physician has aroused the public to the necessity of tonsil and adenoid work more forcefully than any Board of Health work, anywhere.

The doctors deserve and have a right according to fundamental laws underlying a democracy, to demand that the State not enter into competition with them or force them to engage in contract practice in any form under any name, under any circumstances or any means whatever. In this article, addressed as it is to medical men, it is not necessary for me to remind the reader of the great public service all practitioners render every day (it seems to me often at night), and I am quite sure that the humblest practitioner of medicine in the State gives more of his time and talents to the relief of those who cannot pay, or the prevention of disease for those who are unable to recompense with even a moderate fee, than any millionaire in the State gives in a year and certainly much more than double the value of the services of a dozen politicians or newspaper editors who so glibly and fiercely belabor the physician at certain times. In the hour of calamity the public has fallen at the feet of the local doctors and they have never failed to answer the cry of suffering humanity, and never will.

The doctor, at the instance of the State and in accordance with the demands of enlightened society and in obedience to the dictates of a noble and

lofty ambition, goes to a great deal of expense in obtaining the necessary education. He is forced to graduate from a good high school, spend five years in obtaining a pre-medical degree and education, two years to graduate from medical school and one or two years in a hospital, before he can engage in the practice of his profession, thus spending a large sum of money and a great deal of very valuable time. It is not a thing to be undertaken lightly, depriving a group of a large class of men thus prepared, from the legitimate sources of income. Let it be remembered that the general practitioner of medicine, if we go forward in civilization (the State cannot go forward unless the doctors lead), must be the foundation of the medical profession as practiced individually or by a collection of individuals and not the basis for the construction of a system of State medicine.

Education: The State should certainly try, to whatever extent as may be necessary, to forcefully and indelibly impress on the laymen (public) mind the importance of proper medical treatment and the value of preventative medicine. It is the high duty and unquestioned and unquestionable right of the State in its large program of growing healthy men and women, to educate along lines of health. No one can gainsay the advantages of practical demonstrations in educational matters, especially in health work. This has been illustrated more or less by tonsil and adenoid clinics. The time has been when demonstrations were needed but the value of tonsil and adenoid work for example has been taught so thoroughly that everybody knows about it and the State cannot now justify its activities along this line by claiming that it is of educational value or character. In fact, my observation recently has been that the people are not moved to have tonsil and adenoid work done because of the activity of the State in the counties, but are really led to hold back their needed operative work on the assumption that the State will come around after a while and do it for them free of charge, or at half cost. The

same can certainly be said of other commonly discussed and fully advertised activities of many Health Departments, such as typhoid fever, toxin anti-toxin for diphtheria, vaccination for smallpox, etc. On the other hand I think that the State can and should extend the sphere of its great benefit and powerful influence by entering sharply and enthusiastically along other health lines. For instance: Teach the people the value of mental and moral hygiene, the destructive influences of social diseases, etc. However, even in educational matters the State should recede when the community is aroused, the people informed and the practitioner or private interests are prepared and do occupy the field intelligently and fully. I think the time is now at hand when the practitioners of medicine in the State should let their views be known regarding how far organized society should go in its health work, to the end that the tendency which is now manifest to drive along the lines of paternalism can be stopped before it is too late. However, let it be emphasized that doctors never have and never will do anything which will retard the progress of the State in the development of its chiefest of resources—its citizenship. We will suffer evils to ourselves rather than injure the State. Let the local medical fraternity exercise due care and caution in sanctioning the extension of organized health and preventative activities lest in our zeal to promote the public good we work more damage, in pity, than benefit to all concerned. The treatment and administering preventatives by the State free of charge to those who are able to pay, in the long run will not benefit society. It adds to the already great burden of the tax payer and wrongs him. It pauperizes the public and thus wrongs the public. It denies the doctors (an important and really vital factor in the community) the rightful fruits of his very efficient preparation for his life work, and his hard labor.

Resume.

Educational.
Charity.

Restrictive. Regulatory and supervisory to protect one unit against the other or individual against individual as sanitary regulation, supervision of water supplies, etc. Civilization is restriction of rights and recognition of these factors.

GLUCOSE TOLERANCE.

Dr. William Allan, Charlotte, N. C., April 14, 1924.

Glycosuria is only presumptive evidence of diabetes mellitus. In diabetes the ability to utilize carbohydrate is partially lost and the first step toward a rational therapy is the determination of how much sugar the patient can still burn.

It was F. M. Allen¹ who has so clearly demonstrated the necessity for promptly getting the patient's urine sugar-free, and determining the glucose tolerance. His method consists in the withdrawal of food until sugar-free, followed by a diet in which the carbohydrate is increased by a definite amount daily until glycosuria reappears. With the patient in a hospital and not in a hurry to return to work, this plan works very well in the majority of instances, or, it can be modified in mild cases by simply lowering the diet without stopping the patient's usual occupation.

However in some cases starvation followed by step-ladder feeding will not determine glucose tolerance.

(1) For instance, several years ago, we undertook to abolish glycosuria in an emaciated young woman² with a history of sugar in her urine for eighteen years. After a week of starvation the glycosuria was unaffected, the blood sugar was normal, and a glucose tolerance test meal failed to produce hyper-glycemia. It soon became evident that we were

¹Read before N. C. State Medical Society, Raleigh, April, 1924.

dealing with a case of renal glycosuria, or so-called renal diabetes. In these cases sugar is always present in the urine, regardless of diet, and it is only by discovering the constant presence of a normal blood sugar level associated with continuous glycosuria that such cases may be identified.

2. In some cases of high blood pressure associated with glycosuria neither manipulation of the diet nor blood sugar estimation will determine glucose tolerance, as recently emphasized by Woodyatt³. A forty-five year old negro man with marked arterio-sclerosis and blood pressure 180/120, a four plus Wassermann, and blood sugar .23 was sent in for diabetic treatment. His glycosuria disappeared promptly on lowering his diet, and reappeared again when the glucose value of the diet reached 163 gms. However, when the glucose value of the diet was run up to 271 gms. the total daily output of sugar was only 2.4 gms. with blood sugar .178 per cent, so that in spite of the glycosuria there was no limitation of carbohydrate tolerance. Only by controlling the carbohydrate intake and determining the total sugar output in the twenty-four hour urine, can tolerance be judged in these cardio-vascular cases.

3. Life insurance examinations are frequently responsible for the unexpected finding of glycosuria in young men without symptoms. A report of sugar in the urine forever stamps these men as diabetics in the eyes of the insurance companies, and this situation often means a severe business handicap. It is very important that such applicants have their carbohydrate metabolism investigated as the stigma put upon them by an insurance examination is often a rank injustice. Of course the insurance companies must protect themselves and the burden of proof rests on the applicant, but it is to be hoped that the companies will use more discriminating judgment in those instances where the glucose tolerance is clearly not limited.

Several months ago, a thirty-four year old man was referred to us for study because sugar had been found in his urine

during examination for life insurance. He presented himself one afternoon with glycosuria and blood sugar .12. The next morning he was given 1.7 gms. glucose per kilo body weight on an empty stomach and at the end of the first hour showed glycosuria with blood sugar .185 per cent; at the end of the second hour, there was only a trace of sugar in the urine with blood sugar .11 per cent; at the end of the third hour, the urine was sugar-free with blood sugar .085 per cent. As in the cases reported by John⁴, this man simply had a low renal threshold and showed sugar in his urine whenever his blood sugar rose above .11 per cent.

4. Finally, there are times when the determination of glucose tolerance may be impossible because of complicating factors. In November last, we saw an emaciated young woman who had been admitted to the Presbyterian Hospital for a slight respiratory infection. Physical examination revealed an active tuberculosis of the left upper lobe, without fever, and sugar was found in the urine. Two days later she went into diabetic coma with blood sugar 1.38 per cent and in the next twenty-four hours was given 230 units of insulin with one ounce of glucose by rectum, the blood sugar dropping to .176 per cent and the coma clearing up. From this time on, she ran a high continued fever and constantly put out in the urine and burned up together, more carbohydrate than her diet contained although the diet was shoved up to 40 calories per kilo body weight and 90 units of insulin were given daily in an attempt to check the burning of body protein. She died after four weeks as the result of pneumonic phthisis.

Summary:

Glucose tolerance determination is always necessary to confirm a diagnosis of diabetes mellitus and is the foundation on which any rational therapy must rest.

Glucose tolerance may at times be determined by dietary measures and urinalysis alone, but frequently it will be necessary to know the blood sugar level,

the type of blood sugar curve after diagnostic doses of glucose, or the total intake and output of carbohydrate in twenty-four hour periods to avoid mistreating renal glycosuria, cardio-renal cases with glycosuria, or normal individuals with a low renal threshold.

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HYSTERECTOMY.

A Report of Forty Cases.

By Harold Glascock, M.D., Raleigh, North Carolina.
Surgeon-in-Chief, Mary Elizabeth Hospital and
Diagnostic Clinic.

The results obtained in our hysterectomies are as follows:

Youngest case, 25 years old.

Oldest case, 63 years old.

Single cases, 7.

Married cases, 33.

Cases who have born children, 28 or 70 per cent.

Married, but no children, 6 or 15 per cent.

Of the 7 single cases 4 cases had fibroids, 2 Infantile uteri, and 1 suspected Malignancy.

Total number having fibroids, 12 or 30 per cent.

Cases having Chronic metritis, 11 or 27 1-2 per cent.

Cases having third degree retroversion, 9 or 22 1-2 per cent.

Infantile uterus, 3 or 7 1-2 per cent.

Suspected of having Malignancy, 6 or 15 per cent.

Retained placenta, 2 or 5 per cent.

Metrorrhagia, 5 or 12 1-2 per cent.

Ceasarian section, bi-cornate uterus, 1 or 2 1-2 per cent.

Procidentia, 2 or 5 per cent.

Amputation of the uterus was done in 20 cases.

Pan-hysterectomy was done in 20 cases.

Three of the pan-hysterectomies were vaginal operations.

The ovary was removed in 13 cases.

Both ovaries and tubes were removed in 4 cases.

Both tubes were removed in 8 cases.

Sequela:

2 cases had phlebitis.

1 case had abscess.

1 case had Nephritis, and case died.

1 case had suppression of the urine.

1 case had hematuria.

1 case had adhesions.

All made an excellent recovery except the case of Nephritis, which died, and the case which had Adhesions, which is recorded as a poor result.

Ages between:

20 and 30, 6 cases.

30 and 40, 7 cases.

40 and 50, 18 cases.

50 and 60, 8 cases.

60 and 70, 1 case.

Results:

Good in 37 cases or 92 1-2 per cent.

Fair in 1 case or 2 1-2 per cent.

Poor in 1 case or 2 1-2 per cent.

Death in 1 case or 2 1-2 per cent.

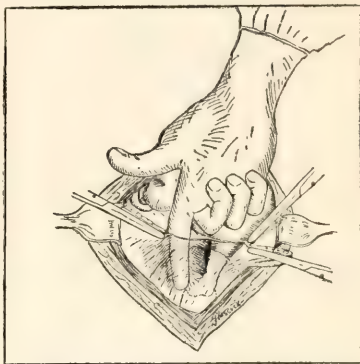
Operation: We have not materially changed any of the operations for hysterectomy. At the present time practically all operations have been pretty well standardized. Very few new operations have been brought out recently, but little refinements are being added daily.

It has been observed in our work, that in those cases where there is a third degree retroversion, and where there is relaxed pelvic ligaments, that hysterectomy gives better results in the way of marked laceration of the perineum with rehabilitation and complete relief from distress, than any other operation, or combination of operations, and in cases that are reasonable risks, and who have reached the age of thirty-eight or forty years, and have been sufficiently pro-

ductive, we are advising hysterectomy. We are also leaning very strongly to pan-hysterectomy, especially since we have improved our technic in this operation. The reason for hysterectomy, is that in all the pelvic ligaments, the same tension can be put on each ligament of each pair; that the vagina can be placed in the pelvis in its original position and its walls made to support the bladder and the rectum; the broad ligaments can be reconstructed so that they better hold the bladder and support the intestines; the utero-sacral ligaments can be tightened and so narrow the culdesac, that the ureter and the uterine and ovarian veins will not be obstructed, and the intestines better supported, so that the bearing down pressure in the sacral region is relieved. The pan-hysterectomy also relieves one of the possibilities of uterine or cervical malignancy. The mere amputation of the uterus relieves only that of the uterus, and mechanical distress. It does not allow the construction of as firm a peritoneal pelvic floor as does the total removal, and the possibility of cervical malignancy and erosions are still present.

In doing pelvic work it is necessary to have a broad field for operation, so the incision is made longer than usual. There can be no criticism of the long incision so long as the operator carefully repairs it, and does not take too long to do so. The field should be well packed off, and the culdesac clean. The uterus is now grasped with a vulsellum forcep and lifted into the wound, and carried from side to side. At this time a survey of the pelvic condition is made. The depth of the pelvis, the height that the uterus can be lifted up into the wound, the amount of relaxation of the ligaments, the position in which the uterus lies, the tone of the ligaments, the color of the uterus, and the position of the bladder, should be immediately added to the history of the case, and the gynecological findings. Not to do this speaks for a very poorly planned operation. If the tubes and ovaries are to be left, and we leave them where ever we can, the round ligament and tube are grasped

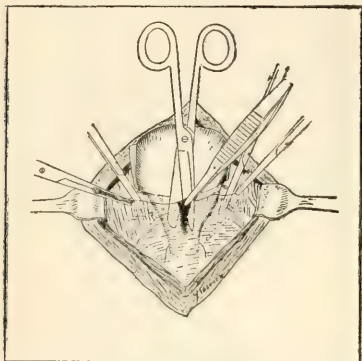
with a straight hysterectomy clamp, and a second clamp is placed immediately beside it. The tissues are then cut with scissors as far as the points of the forceps. The peritoneum is then cut across the anterior of the uterus to a point on the opposite side where the points of the clamp on that side will be placed. A similar incision is made across the dorsum of the uterus. A small forcep is then placed under the peritoneum between the points of the two forceps and the peritoneum dissected up from the uterine artery, by spreading the forcep and withdrawing.



Cut No. 1—Shows the finger dissection of the peritoneum.

The index finger is then slipped under the peritoneum, and it is dissected deep down under the bladder, and inward as far as the utero-vesical ligament, and then the finger is carried outward pushing the ureter outward and out of the immediate field of operation. The finger is then placed under the posterior peritoneum and it is dissected away from the uterus as far as the vagina. When this same procedure is accomplished on the other side, the uterine arteries are brought well into view, and they are grasped with long curved hysterectomy clamps, always being careful to direct the point of the forcep firmly toward the uterus. A second clamp is then put on beside the former. When this procedure is carried out on the op-

posite side, and the uterine arteries are divided, a forcep then grasps the center of the anterior peritoneal flap or the median raphe, or more properly the utero-vesical ligament, and it is cut away from the cervix with scissors.



Cut No. 2.—Shows the cutting of the utero-vesical ligament after finger dissection.

(See cut). As soon as this is done the peritoneum strips easily off the uterus and cervix as far as the vagina, and the cervix can then be removed with but very little cutting and hemorrhage, except the cutting across the vagina. This procedure makes the dissection very easy. It protects the ureters; it permits of a wide removal of the cervix and it also hastens the operation. The vagina is now caught with Ochsner forceps, and the vault sewed. The uterine and ovarian arteries are now tied, using our technic for ligaturing large pedicles. The pedicle is grasped with a second forcep which is smaller and narrower, and taking in its bite half of the bite of the former forcep. With the dull round needle that we have devised, half of the stump just in front of the point of the small forcep is caught by passing the ligature through the stump, and as the ligature is put through the stump being careful to slightly overlap the first ligature, and as this ligature is tied the small forcep is removed. This gives a non-slip ligature and no danger

of losing the pedicle. The dull needle allows the needle to be thrust through the stump without penetrating any of the vessels which it might contain. As soon as all the bleeders are tied, a double No. 2 chromic cat suture is placed through the round ligament on one side back of the ligature, and then carried through the anterior and posterior folds of the broad ligament once or twice between the stump of the round ligament and the vault of the vagina, and then passed securely through the vagina getting a firm hold and then out and through the broad and round ligaments of the other side in like manner. This brings both round ligaments and laps them across each other, and tied firmly into the vault of the vagina. At this point the vagina may be lifted to the desired point by additional stitches in the round ligaments, and each broad ligament may be tightened to the same degree. As the anterior and posterior flap of the peritoneum are united, the bladder and the utero-sacral ligaments are lifted, and the stump is fixed as far backward as desired, and a real and permanent cul-de-sac is formed. It is very suggestive that as long as the cul-de-sac is preserved backache will be very much lessened.

Pan-hysterectomy calls for a great deal of constructive skill. I do not know of any operation where the repair is so much of the operation and so important. It is certainly true in this operation, that the result obtained will not be from Exeresis, but from the repair.

It must not be gathered from this paper that a perineorrhaphy is not indicated when a pan-hysterectomy is done. We advocate a perineorrhaphy in all cases where the perineum is overly relaxed, or where there is a subcutaneous or submucous laceration, and where there is a visible laceration.

COMPARATIVE STUDY OF ETHMOIDAL AND SPHENOIDAL SURGERY WITH REFERENCE TO EYE COMPLICATIONS.*

Slade A. Smith, M.D., Wilmington, N. C.

The ethmoid cells and sphenoid sinuses are so closely articulated as to be considered one structure. The division between the anterior and posterior ethmoidal cells cannot be made out surgically nor can the posterior cells be completely exenterated without removing the pars ethmoidalis which will open the sphenoid sinus. The optic nerve is in close relation with the lateral and superior aspect of the sphenoid sinus and usually with the postero-external angle of the last posterior ethmoid cell. Its course forward in the orbit carries it further away from the inner orbital wall the further it goes forward so that it is increasingly removed from the possibility of contact with the anterior ethmoid cells. In some cases the optic nerve grooves the sinus wall so deeply that the sinus may be said to surround it. Hence in disturbance of the optic nerve the usual or logical site of a causative nasal lesion is in the sphenoid sinus or the posterior ethmoid cells.

Appreciating the fact that the post ethmoid cells and the sphenoid sinus are causative factors in many of the optical nerve disorders, has centered our attention on this region for some time. For a long period anterior ethmoid cells held the attention of the rhinologist due to their relationship to the frontal sinus.

The older operations were so designed that the anterior ethmoid cells were first attacked and were thoroughly exenterated at the expense of an uncertainty of thoroughness in the post. region. If the sphenoidal sinus and post ethmoid cells are the important factors then the successful operation must be based on thoroughness in their exenteration.

The most important group of ocular

complications of nasal sinus disease are those in which there is sinusitis without external signs of orbital inflammation, but in which there are optic neuritis, neuroretinitis, retinal thrombosis, or in which without marked ophthalmoscopic changes is a central scotoma. We may have all the symptoms of a typical retrobulbar neuritis due to rheumatism, tuberculosis, gout, syphilis, diabetes and a number of the acute infectious diseases, and yet coming directly from a focus of infection in the post. ethmoid cells or sphenoid sinus. While in others the retrobulbar neuritis manifests its presence by a relative central scotoma, later the scotoma becomes absolute and the field of vision contracts. The usual scotoma is bilateral though they may be unilateral. It can easily be bilateral both by reason of the frequent coincidence of bilateral suppuration of the nasal sinuses and on account of the frequent relation of one sphenoid to both optic nerves.

If the cause of these optic nerve complications is not recognized and speedily removed either by suitable intranasal drainage with or without operation blindness from optic atrophy is likely to follow.

The fundamental law of safe ethmoid and sphenoid surgery is to work by sight only, avoiding tearing by accomplishing each removal with a clean bite, therefore the curet has partly been discarded and the biting forceps controlled by sight has taken its place.

The operation that I am partial to and I think has for its advantages a greater chance of thoroughness in resecting the anterior wall of the sphenoid and exenterating the posterior ethmoid cells, is in part outlined in Dr. Loeb's book. The patient having been thoroughly anesthetized (local preferred) is placed in a semiprone or upright position with nurse supporting the head. The middle turbinate is completely removed. This will always leave a fleshy tag at its posterior-inferior attachment. The sphenoidal sinus is situated immediately posterior to this tag and at all times this tag may be used as a landmark. By passing the sphenoidal punch alongside this tag the sphenoidal sinus

*Read at the Fifth District Medical Society at Wilmington, N. C., Aug. 21, 1924.

can be directly entered at its safest point. The pars nasalis is resected with due reverence to the position of the posterior branch of the nasopalatine artery. The resection is carried outward and by the removal of the pars Ethmoidalis the posterior Ethmoidal cells are entered. To eliminate annoyance to patient of frequently clearing the throat, and too, interfering with progress of the operation, a small piece of gauze is now placed so as to fit against the nasopharynx, this lessens the amount of blood that will run down into the throat.

The exenteration of the ethmoid cells is accomplished with suitable biting forceps, starting from behind and working forward at the level of the attachment of the middle turbinate. The cells which lie above the attachment of the middle turbinate are removed by using the forceps in such a position that the longer blade is toward the median line. This will prevent injury to the cribriform plate. If there has occurred a hypertrophy of the ethmoid cells to such a degree that they obstruct the vision of the posterior region before the obstruction must be reduced before the more delicate posterior surgery is undertaken. In like manner if the septum is deflected and will interfere with free instrumentation at the time of operation or in the after treatment it should be resected. As all the operation is done by sight the field must be kept clean of blood. This is done in part by a suction tube. In the majority of cases no dressing will be required.

Within a short period after thorough drainage has been established the eye symptoms will disappear and sight will be restored in part or wholly depending on the time the case has gone without care and the amount of destruction to the optic nerve.

I thank you.

RETROGRADE DILATATION OF ESOPHAGEAL STRICTURES.

J. G. Murphy, M.D., F.A.C.S., Wilmington, N. C.

The esophagus, a muscular canal about nine inches long extending from the pharynx above to the stomach below, resting behind on the vertebral column, attached in front loosely by muscular bands to the more resilient cartilaginous tube—the trachea, and bounded on either side by the mediastinal cavities, is one organ in the human body on which direct surgery is difficult; in fact almost impossible in certain areas. It is about strictures or contractures of the esophagus that I wish to call your attention. Men in general practice can testify to the frequency of this condition, and certainly one in whose specialty falls esophagoscopy knows that these cases are common. Granting that we have them, and that we have to treat them, the question is treating them the way that produces the safest and quickest recovery. The old method of passing bougies blindly down, and making sufficient pressure to get the results, is so fraught with danger, and gives fatal results so often that new and modern medicine and surgery must look for a better method of treatment.

Certainly if there is one man in America who stands out prominently in a specialty, it is Chevalier Jackson, in the field of Bronchoscopy and Esophagoscopy. From time to time during the last several years I have had the privilege, after taking post-graduate work under him, of visiting his clinic, and it is from teaching received at this source that I am able to come before you with the cases I have to report. These cases, each, have esophageal strictures as a result of swallowing caustic lye. The June 3rd, 1923, Journal of the American Medical Association carries an article by Dr. L. H. Clerf, the assistant to Dr. Jackson on "Cicatricial Stenosis of the Esophagus caused by Commercial Lye Preparations," in which he reported 18 cases. In this issue of the Journal you find the picture of one of my patients, which was afterward treated by

me. The method I shall show to you is the same that is carried out in the Bronchoscopic clinic at the Jefferson Hospital in Philadelphia. Quoting Dr. Jackson—"Spontaneous recovery from cicatricial stenosis probably never occurs, and the mortality of untreated small lumen strictures is very high. Blind methods of dilatation are almost certain to result in death from perforation of the esophageal wall, because some pressure is necessary to dilate a stricture, and the point of the bougie, not being under guidance of the eye, is certain at some time or other to be engaged in a pocket instead of in the stricture. Pressure then results in perforation of the bottom of the pocket. Blind bouginage should be discarded as an obsolete and very dangerous procedure. If the stenosis be so great as to interfere with the ingestion of the required amount of liquids, gastrostomy should be done at once and esophagoscopy treatment postponed until water hunger has been relieved. Gastrostomy aids in the treatment by putting the esophagus at rest, and by affording the means of maintaining a high degree of nutrition unhampered by the variability of efficiency of the swallowing function." The method followed in the clinic is to do a high gastrostomy and feed the patient through a catheter inserted through this wound, and after the esophagus has been put at rest the patient swallows a silk thread. When this has reached the stomach it is picked up with a tonsil pillar retractor and the circuit is made complete from the esophagus and stomach with the two external ends tied together. To pass the dilator, the external string is cut and to the lower end is attached a new string a few inches above the cut end, and to the cut end is attached the Jackson-Tucker dilator. This is pulled up through the gastrostomy wound into the stomach and through the esophagus thus dilating it from below up. This is the safest of all the blind methods, and is the one now in practice at the Bronchoscopic Clinic at the Jefferson Hospital.

Following is the history of one of my cases that is here today and will in a

few minutes receive his weeks treatment in your presence.

Name, Clyde Allen Brown, (Father, Ned), address, Pink Hill, N. C., R. F. D. No. 2. Age 3 years.

Weight when first seen, 18 lbs. 7 ozs. The case was referred to me by Dr. J. B. Sidbury, of Wilmington, N. C., and was seen in his office in consultation with him. Complaint: Inability for four weeks to swallow and retain food, and for the last 12 hours, inability to swallow any water at all.

Six weeks before, his mother was using lye for scouring the kitchen and had some in a glass, which was left on the kitchen table, and Clyde, thinking he was swallowing milk took some of the lye.

Two weeks after this, he began to vomit up his food. What he would eat one day, he would vomit up the next, and after a few weeks of this he began to vomit everything that he swallowed, after remaining down for a shorter or longer time it would come back.

The patient was extremely emaciated. He looked like one of the Near-East starvation children. He had lost weight till his little limbs were nothing but skin and bones, with the abdominal walls shrunken with the skin lying in folds, with an anxious pitiable expression of the face, quickened pulse and respirations. He was sent to the James Walker Hospital and fluids were injected into the peritoneal cavity, subcutaneously, and also into the veins in order to correct the dehydration. It is well to note that no surgery of any kind should be done while the patient is in this condition of dehydration. After nourishing him in this way for two days, and a blood transfusion of 400 c.c. from his father, a gastrostomy was done by Dr. T. M. Green of Wilmington, N. C., and a rubber catheter passed in through the opening and nourishment was given direct into the stomach through this route. Water was given through the tube also, allowing the inflamed, strictured esophagus to have absolute rest. Two days later, September 5th, he was allowed to have a small amount of water by the mouth to as-

suage thirst, and this was usually retained, though occasionally vomited. Patient had a rather slow convalescence, and did not begin to swallow milk and ice cream and retain it for about ten days. He gained strength and weight rather slowly, and it was October 9th before we succeeded in getting him to swallow the string. With a pillar retractor this was pulled out through the gastrostomy wound and the circuit made complete, and patient left hospital on October 11th, 1923.

Since October he has been dilated once each week by the retrograde method and we have gotten him up to a No. 18 Tucker dilator.

As you can see he is well nourished now and growing as a boy should at his age.

PREVENTION OF POST-OPERATIVE PAIN.*

By H. Stokes Munroe, M.D., Charlotte, N. C.

Surgery has been improved so much in recent years that it seems to have almost reached the state of perfection. The refinements of technique, the thorough diagnostic methods, and the standardization of various surgical procedures have elevated a surgical operation from something to be feared and dreaded by the unfortunate patient to a very popular method of cure. The horror of it is gone, but a patient who has passed through a surgical operation even at the present time in one of our best equipped hospitals, will often truthfully tell his friends that he is sound and well, but hopes he will never have to go through such an experience again. He remembers the nausea, the sleepless nights, the pain, and discomfort he has passed through. The modern hospital has been so improved that it is a haven of rest for one taking the rest cure, but even the best environments will not always alleviate the suffering patient who

sometimes wishes he had never been operated on.

Many things now add to the comfort and safety of patients and make them feel that everything possible is being done for them. We have beautiful operating rooms, well lighted, clean, aseptic, and perfectly arranged. The improved anaesthetics are pleasant to take, leave no very unpleasant after-effects, and are administered by careful and experienced anaesthetists. The nurses are well trained, and in constant attendance at the patient's bedside. Well ventilated rooms, comfortable beds, special beds being often provided for certain cases, back-rests designed for various degrees of elevation, electric fans and silent call-bells are some of the recent innovations. Even radio, musical concerts, and flowers have been added in some hospitals for the pleasure of convalescent patients.

The psychic element is very pronounced in some people, especially nervous individuals. Many fear the anaesthetic and it is surprising how many physicians come in this class, knowing as they do the little danger therefrom when properly administered. Some fear death even in operations of little danger; others are fearful of the nausea, and suffering they will have to undergo and often refuse surgical treatment for this reason alone. A few words of assurance from the surgeon will often inspire the confidence of the patient and allay this fear which he may not express—assuring him that every possible effort for his safety will be made and that he shall be kept as comfortable as possible. As a rule, the surgeon can inspire this confidence by a short personal visit to the patient after he enters the hospital.

There is usually to be expected a moderate amount of nausea, vomiting, and pain after any operation. Some anaesthetics, however, produce very little nausea. This is especially true of gas and oxygen and local anaesthesia. After any operation there is nearly always some pain and discomfort. It is not severe in some and is very severe in others. If we can succeed in the elimina-

*Read at the Wadesboro meeting of the Seventh (N. C.) District Society, Oct. 7, 1924.

tion of nausea and post-operative pain, we will have accomplished much in adding to the comfort of our patients. It is my purpose to discuss briefly some effective methods of combatting post-operative pain. Following long operations, pain in the back is a very common and annoying complaint. It is probably caused in most instances by the complete relaxation of the spine induced by the anaesthetic. No doubt a table device that could be made to conform to the natural concavities and convexities of the spine would eliminate this cause of pain. Much, however, can be done by using a well padded table and placing a pillow under the lumbar part of the spine to prevent this strain. By the routine use of a small pillow so placed during the operation much of this after pain will be prevented.

Pain in the incision is probably the most frequently complained of. The straining and retching from vomiting increase this pain to a marked degree. We too often are careless in closing the skin and superficial fascia and tie the interrupted stitches too tightly. There is always some swelling between the sutures which makes them painful. It is best to tie the sutures just tightly enough to accurately approximate the skin edges and allow for a little swelling. In some sensitive locations, especially about the anus and fingers, skin stitches are very painful. In these locations, especially, very loose sutures or subcuticular stitches are much more comfortable. Around the anus it is often best not to use any sutures at all for the natural puckering of the skin keeps its edges in very accurate apposition.

Large nerve fibers may be carelessly included in the sutures and cause an unnecessary amount of pain. The ilio-inguinal and ilio-hypogastric nerves are sometimes thus constricted in hernia operations, and cause of the discomfort is so often attributed to nervousness or imagination. By a little care, these nerves can be seen and avoided.

In the closure of long abdominal incisions, the technique usually followed is

a continuous suture of plain or small chromic catgut. Keeping the suture taut as it is applied produces an abnormal shortening and puckering in the peritoneum which causes not only an immediate post-operative pain but also a pulling after the patient begins to stand erect; the latter causing him to lean forward gives the characteristic "post-operative gait." This can be avoided by putting a lock in the peritoneal stitch at frequent intervals.

Infection is probably the most common cause of pain that begins in a wound several days following an operation. We sometimes have infection in what we consider perfectly aseptic operations. The usual accompanying signs of infection are elevation of temperature, redness, swelling, and tenderness. Prompt drainage is the safest surest relief.

Many patients fear the removal of stitches, having often been warned by some wise friend about the torture of having them removed. An assurance from the surgeon that the pain is no more and very similar to that of pulling a small hair from the arm, usually allays this fear. The removal of the stitches should be done with a pair of sharp scissors so that the sutures may be cut squarely and not fringed or "chewed in two." There is a little dry secretion on the stitch where it penetrates the skin which causes pain if pulled through the stitch hole. The stitch should be pulled up a little and cut below the skin surface and removed from the opposite side. If all the stitches are cut before removing any of them and then the patient instructed to take a few long deep breaths, it loosens them all so they can be easily removed. Sometimes it is advisable to cut them all one day and remove them at the next dressing. Care should be taken not to pinch the skin with the scissors, and to avoid this a good light is essential.

After abdominal operations the pain is very often intra-abdominal and is due to unnecessary trauma accompanying the operation. Some of this pain may be greatly minimized by a careful technique. Rough handling, pulling on the

viscera, and contusion with instruments are usually the cause and not infrequently occurs when trying to work through too small an incision or one improperly planned. A fact often forgotten is that most of the pain caused from the intestines is due to pull or tension on the mesentery, therefore sutures placed so as to leave a tension on the mesentery will cause an unnecessary amount of discomfort. The use of local anaesthesia has taught the surgeon a great deal about the refinements of abdominal work.

Tympanitis and gas pains are not nearly so common as formerly now that we have learned how to prepare patients properly. Too much purgation and restriction of diet are probably worse than no preparation at all. Every surgeon is well aware of how nicely patients operated on in emergency without any preliminary preparation usually get along. It is always wise, however, to give a single dose of castor oil one or two days previous to operation as a prophylactic for the prevention of gas. Too much purgation and restriction of diet probably predisposes to gas.

A certain amount of peritoneal irritation and reaction follows every abdominal operation and necessitates absolute rest for restoration to normal. Too early purgation or highly stimulating enemata, not only cause a great deal of pain, but accomplish very little. If an enema is for any reason indicated, it is best to use soda or salt in the water because if it is not all expelled or returned through the rectal tube it is readily absorbed.

Peritonitis and intestinal obstruction are serious complications with pain as an early symptom. We must be constantly on the lookout for these and not mistake them for the simpler causes of pain we are considering in this paper.

As a rule a preliminary hypodermic of morphine and atropine before the anaesthetic is advisable, unless the patient has an idiosyncrasy for one of these drugs. It makes the anaesthetic easier to take and the patient sleeps several hours after the operation is over. There is no objection to giving

small doses of morphine at intervals following the operation. My usual rule is to order one-eighth grain morphine hypodermically every three or four hours as needed to keep the patient comfortable. Codeine may be used as a substitute, but it is not as efficient.

After discussing briefly the causes and prevention of various conditions that increase a patient's suffering following operations, I wish in conclusion to describe briefly a method I have used in selected cases for several years to prevent the pain that necessarily follows an operation, even after taking all the precautions above outlined. For want of a better name, it might be called "nerve blocking of the operative field with quinine and urea." The anaesthetic properties of quinine and urea and its prolonged action have been known for some years. It has been successfully used as a local anaesthetic, but in large amounts it causes an infiltration and fibrosis of the tissues which interfere with and delay the normal process of repair and is, therefore, not an ideal anaesthetic for general use; being also much inferior to novocaine. The local anaesthetic effects of 1 per cent quinine and urea lasts three or four days. At the completion of an operation done either under general or local anaesthesia, the sensory nerve supply of the operative field is blocked with a 1 per cent solution of quinine and urea. I use it mostly in rectal operations and appendectomies, though not in acute cases, and results have been most satisfactory in such cases. Using it in small quantities, I have noted no complication or interference with prompt healing of the wound in any of the cases. One did develop a phlebitis in the femoral vein, but I could not attribute this to the method. I use the ampules of quinine and urea put up in 1 per cent solutions or dilute a concentrated solution from an ampule to the desired strength. My technique for using it in an appendectomy is as follows: after the appendix is removed the meso-appendix is injected with the solution. The peritoneum is then infiltrated on each side about one quarter inch from the cut

edge. The nerves in the fascia are then blocked by inserting a long needle through the edges of the incision. After insertion of interrupted silk-worm gut sutures, a long needle is inserted under the skin and an infiltration made on each side around the stitches. Care must be taken not to put the solution too near the skin. The sutures are then tied just tightly enough to accurately approximate the skin edges. If the nerves are properly blocked the patient will have no pain and no narcotics will be necessary in the post-operative care. Following rectal operations a few cubic centimeters of this solution injected deeply on each side, in front, and behind the anus will usually give the desired results. It is really refreshing to see patients react from operations and say they experienced no pain and only a heavy, dull feeling about the incision. This method is applicable to a great many surgical operations and any surgeon familiar with the sensory nerve supply can, with a little practice, successfully block these nerves.

Summarizing, I have endeavored to show that surgeons should try to save

their patients as much suffering as possible, both physical and mental. Some minor things in our operative technique are productive of pain which may be avoided. We have pain in the back from the relaxation of the spine on the operating table; pain in the operative area caused by tying the skin sutures too tightly, catching large sensory nerves in the sutures, puckering of the peritoneum, overlooked superficial infection, and careless removal of stitches. Intra-abdominal pain may be caused from tympanitis and gas due to improper preparation, rough handling and contusion of the visera during operation, suturing the mesentery so there will be a constant tension on it, and excessive peristalsis induced by too early catharsis or stimulating enemata.

Notwithstanding all these precautions there is some post-operative pain which can be prevented by the judicious use of opiates or nerve block of the operative field with 1 per cent solution of quinine and urea. This nerve block can be used in many of our operations. The method of its use has been briefly described.

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CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

A Vital Problem.

In his article "Some Observations in Public Health Activities" in this issue of this journal Dr. James M. Parrott has discussed, from his viewpoint, one of the very most vital problems of the day.

Never a day passes without some problem to be solved which will influence all future time. The conditions of some years ago are not the conditions to be met today. It is not enough to say "we have come to a fork in the roads and we must decide which one to take." We are **always** at some fork in the roads and with the changing events of time there is never one moment but that we must decide which road to take. There is never one moment in life when we can securely ride along without thought of whither we are going.

There may be those in North Carolina who agree with Dr. Parrott in the position he takes. There may be those who do not, but most assuredly there are multitudes who have inculcated in their very being the pioneer spirit—the spirit of self reliance—which makes for freedom of thought and the development of wholesome Americanism.

With all this independent thinking, however, there must be unification of action, else chaos would reign supreme.

The medical profession of a right ought to be, and in fact is, a leader in ever movement along health and efficiency lines, which are intended for the advancement of that which we are pleased to term civilization.

North Carolina's two and one half million people are looking to North Carolina's two thousand doctors to lead them in the way that will bring the greatest good to future generations. These doctors have voluntarily chosen their own profession and as individuals can continue or quit just as pleases their fancy. The responsibility is on the shoulders of the profession and cannot be shifted. The demands of the people which must be met are the demands of today and not the demands of yesterday.

Just as "virtue is its own reward" so the very best service to mankind will be the best service to the medical profession. The point then we wish to emphasize is,—**How can we best do for the people the things that will make the present and future generations healthier, happier, more efficient and more virile?** This is the vital problem. It is not fundamentally a matter of whether we shall have State medicine or not. It is not fundamentally a matter of discussing what is selfishly best for two thousand doctors in the State.

In the one item of diseased tonsils, and adenoids it is not so much a matter of whether these defects shall be removed under the direction of servants of the State or by the individual doctor. The point is, to remove these handicaps **today** by some means, even to the extreme of whether foul or fair, so that the future citizen of the State—the coming generation—may measure up to its fullest possibilities. With water pouring through a leaking hole in the dykes there is no time to stand back and argue who shall be permitted to stop it and get the glory.

We are told that approximately eleven thousand children in the State have had diseased tonsils and adenoids removed in the State clinics and by a means that has added absolutely no appreciable burden to the tax payer. We are told that in every county where a clinic has been held the education of the clinic has resulted in a multiplied number of operations done by individual doctors for the removal of these defects,

We are told by parents, teachers, and the children themselves of the marked change in the health and aptitude of these children following the operation. There is positively no known means of making even the wildest estimation of the value of this to the future North Carolina.

And yet with all of this, only a very small percentage of the children have been helped who are needing and **demanding** help from some one. The people of the State show little concern as to **who** does it just so it gets done. Those who are able to pay do so gladly and those who are not able simply can't, and that's all.

As a matter of self preservation the people are demanding certain things in the way of safeguarding health and life. If the need was fully met there would be no demand. If there was no need for "Public Health activities" there would certainly be no public health activities.

No class of persons have received greater praise nor more eulogized in song and story for self sacrificing, altruistic service to mankind than have physicians. The public do appreciate the efficient service of their doctor and give him a full measure of confidence. This, however, does not alter the fact that "necessity is the mother of invention" and had there been no necessity there would have been no development of any public health activities.

The public do not criticize what the doctors **have** done,—they do not criticize the profession at all—they simply say they want to be protected from preventable diseases, they want to be immunized against infections and they want their handicaps removed. They do not say **how** it shall be done or **who** shall do it.

If observations of the past may permit deductions then there are yet many thousands of children in the State who are handicapped because of remediable defects. If the profession will find a way to meet the need (and the profession has not done this else there would be no need) without its being done by

ed. If the profession will find some other way of better doing what health organizations are now doing; there will very soon cease to be health organizations. We must face the facts and meet conditions as they actually are rather than as we might wish them to be.

Southern Medicine and Surgery lives only to serve the medical profession and the public the profession serves. Our privilege is to pass on to all other doctors the constructive and helpful thinking of an individual doctor.

Publicity a Service.

From time immemorial the medical profession has consistently avoided publicity.

Publicity in the nature of self praise would be an abomination to every self-respecting individual and cannot be tolerated, but publicity in the sense of taking the public into our confidence might be a real service to humanity. There is neither mystery nor secrecy about the healing art so far as the medical profession is concerned and medicine has no occasion to go about wearing a hooded shroud.

Times are changing—have changed—but in some respects and since the days of Hippocrates doctors have changed but little.

Publicity may be a real service to mankind. Certainly the public should be acquainted with the wonderful story of preventive medicine. They should be told how they can help themselves to live healthier, happier and longer lives. It should be explained and demonstrated how certain physical defects handicap life's endeavor and how these defects may be removed. All of this information is rightfully theirs and the medical profession is morally bound to let them have it. Legitimate and honest doctors are just as much responsible for the protection of their people from the ravages of the impostor and quack as they are for protecting their people against the ravages of smallpox diphtheria or any other pestilence.

There is no reason why we cannot be proud of our achievements and perfectly

the State then the public will be pleas-

frank about our limitations; yet most doctors are of the opinion that any form of publicity violates our traditions. That may be true but if traditions are a handicap to the people and a millstone around the neck of progress then these traditions can well be discarded and new traditions established.

There is sometimes disagreement as to what constitutes news, and even great editors sometimes confuse news and gossip.

Nothing is news that is not true and values are not measured in personalities.

MEDICINE

Wm. B. Porter, M. D., Dept. Editor.

Medical Assets of Acute Appendicitis in Children.

John Howland, Baltimore (Journal A. M. A., Sept. 27, 1924), discusses the part that intestinal parasites, particularly Oxyuris, play in the causation of appendicitis. The worms are found not only in the lumen of the appendix but very often beneath the submucosa, having worked their sinuous ways through the mucous membrane, sometimes into the lymph follicles. It may be impossible to demonstrate the point of entrance of the worm even by serial sections, but there are shallow hemorrhagic ulcers that are believed to be characteristic of the injury due to Oxyuris. Usually, the worms are found embedded in the submucosa, with little or no inflammatory reaction about them. The high incidence of the presence of worms within the tissues of appendixes that are the seat of catarrhal change seems in Howland's opinion to be the strongest evidence for regarding them as the cause of the attacks. While the

symptoms in the catarrhal form are mild, there is one so pronounced as to form a rather distinct feature. That symptom is pain. The discomfort is constant, and may become exaggerated in paroxysms. This is in striking contrast to the low fever, slight leukocytosis, absence of prostration and the poorly marked tenderness, rigidity and distention. Howland reviews the symptoms by means of which a diagnosis is to be made. It is not always easy; indeed, it is at times nearly impossible with the infant. Though appendicitis may simulate meningitis, intussusception, bladder stone, pyelonephritis and innumerable other conditions, the true diagnosis can usually be made if the possibility is constantly kept in mind and careful examination practiced. There is justification for dreading this disease in the very young because the attacks are usually severe. Certainly, mild attacks comparable to those encountered in later life are distinctly uncommon. General peritonitis may supervene as early as the second or third day. But it would be a mistake to conclude that such was the rule. The literature shows, and Howland's experience bears it out, that many patients have lived as long as would an adult, and that the process has remained localized for days and sometimes even for weeks. He believes that Drachter is entirely right when he says that the problem of appendicitis in the young child is one of diagnosis, and that, if operation is performed before there is general peritonitis or pocketing of pus in numerous places, the mortality of appendicitis should be no greater but should be even less than it is with the adult.

Cerebral Malaria.

Otto Tiemann Brosius, Barranquilla, Colombia (Journal A. M. A., Sept. 13, 1924), reports the case of a boy, aged 10, who when first seen was in a semi-conscious state with convulsive seizures, screaming frantically at spasmodic intervals. Symptoms suggestive of tetanus were present and an enlarged spleen. A blood smear stained by Hasting's method, showed the presence of both the malignant and benign tertian parasites. An intravenous injection of 6 grains (0.4 gm.) of quinin dihydrochlorid was given immediately and repeated twice that day, after four-hour intervals. The following day, three more intravenous injections of quinin dihydrochlorid, of 6 grains (0.4 gm.) each, were again administered at six-hour intervals. On the third day, the quinin was administered in the same way as on the preceding two days. By the morning of the fourth day, the patient had regained complete consciousness. Quinin dihydrochlorid was now given by mouth three times a day, in 6 grain (0.4 gm.) doses, for six days more. Then 5 grains (0.3 gm.) was given three times a day for ten days, after which, for ten days more, 5 grains (0.3 gm.) was given mornings and evenings. Thereafter a tonic was administered. The case is illustrative of the fact that blood smears should be examined in almost every case in tropical lands, and that cerebral malaria should not be too quickly eliminated in a difficult differential diagnosis.

SURGERY

A. E. Baker, M. D., Dept. Editor

The subject under discussion by surgeons, when and when not to drain the peritoneal cavity, is so vital that a patient's recovery may be determined by the operators correct judgment.

"The Problem of Drainage in Acute Appendicitis" by Brockman, Brit. J. Surg. of last month, states that:

"The trend of opinion in recent years is toward the elimination of drainage in acute appendicitis as far as possible with safety.

Faecal fistula, secondary hemorrhage, residual abscesses, and the formation of intestinal bands causing obstruction are much more common, and convalescence is less comfortable and more prolonged, when drainage is established than when it is avoided.

The resistance of the peritoneum to infection is explained by the absence of a rapidly acute tension causing tissue destruction. The greater resistance of the pelvic peritoneum as compared with that of the peritoneum in the upper part of the abdomen is due to the looseness of attachment of the former. In the upper abdomen the membrane is firmly bound down to the substance of the liver and diaphragm.

The advisability of drainage depends upon the state of the peritoneum. The question to be decided in every case is whether the damage done has progressed so far that complete return to normal

would be impossible after the removal of the primary cause of the inflammation.

If closure is effected without drainage, the peritoneum must be intact at the time the abdomen is closed and must remain intact after closure.

The author divides cases of appendicitis into the following classes: Class A, cases in which the condition is that of a frankly localized abscess with granulating walls which bleed freely as soon as the pus is evacuated. In such cases drainage is indicated whether the appendix is removed or not.

Class B, cases of ordinary acute appendicitis in which the appendix has not become gangrenous or perforated. Free fluid may be absent or, if present, is just becoming turbid. In a series of 390 such cases treated by appendectomy followed by primary closure there were no untoward results. Drainage is necessary only when the appendix is buried in a mass of old adhesions, the removal of which denudes a large area of its peritoneum and causes oozing.

Class C, cases of gangrenous or perforative appendicitis with diffuse peritonitis. In such cases the peritonitis is often purulent. In the great majority, closure can be effected without drainage, but in a few, especially those in which the cells of the peritoneum have obviously undergone a destructive change, closure without drainage would change the potential abscess into an actual abscess. In the absence of definite signs discernible to the eye, the following facts must be borne in mind:

1. Cases in which the condition has been present longer than three days are more apt to require drainage than those dealt with earlier.

2. A child of twelve years or under with a gangrenous appendix and purulent fluid in the pelvis will not stand closure as well as an adult with the same condition.

3. The degree of toxæmia can be judged with considerable accuracy from the patient's general appearance and facial expression. The presence of cyanosis without dyspnoea is a sign of advanced toxæmia. It usually foretells a

fatal ending and is a clear danger signal against closure without drainage.

It is believed by many surgeons that an exudate with a purulent appearance is pus which demands drainage. The author states, however, that drainage of a pus containing cavity is necessitated, not by the contained fluid, but by the condition of the walls of the cavity. This is true in the case of the peritoneal cavity. Wilkie holds that an immediate examination of the fluid will give the necessary information. He claims that the absence of large mononuclear cells, their failing power of absorbing stains, and absence of phagocytosis are evidences that drainage is required. The surgeon can usually rely upon the gross characteristics of the exudate. The greater the amount of fluid found, the safer it is to close without drainage, provided the exudate, however purulent it may be, is homogeneous in appearance. Drainage is required in cases of gangrenous appendix with dry peritonitis of the diffuse variety; in those with a blood stained purulent exudate; in those with a large number of definite flakes of coagulated lymph; and in those with an exudate which has been described as resembling beef tea. Apart from these conditions, the presence of a purulent peritonitis does not of itself demand drainage.

The degree of gangrene or perforation of the appendix matters little in the question as to the advisability of drainage provided the organ lies free in the peritoneal cavity. If it is bound down by adhesions or is extraperitoneal, its removal leaves a raw infected surface of connective tissue which demands local drainage. Any signs of extensive thrombosis or threatened gangrene of the caecum or intestines or a marked oedema of these parts gives warning that closure may cause serious trouble.

Drainage is of three types: (1) local drainage, (2) pelvic drainage, (3) safety-valve drainage. In all instances the material used is rubber tubing.

Local Drainage. Local drainage is called for when the invagination of the appendix stump is insecure, when the formation of a faecal fistula is feared,

when there is local oozing, and when there is an abscess cavity shut off from the general peritoneum.

Pelvic Drainage. There are very strong factors against the use of pelvic drainage. The tube becomes shut off from the peritoneal cavity in a few hours, and the only indication for the use of a drain in the pouch of Douglas is the presence of an abscess cavity in that region at the time of operation.

Safety-valve Drainage. Safety-valve drainage can be provided by passing a tube just through the incision in the parietal peritoneum. The spaces in the abdominal wall should be drained to prevent diffuse cellulitis of the walls—a tube to the peritoneum, a tube under the external oblique aponeurosis, and a silk-worm gut twist above the aponeurosis.

The question of drainage can be definitely settled only by a true understanding of resistance to infection. If a patient possesses strong resistance, it is immaterial whether drainage is established or not. If he lacks this power, trouble is to be expected whether drainage is established or the abdomen is closed primarily.

Pediatrics

Frank Howard Richardson, M.D., Dept. Ed.

Preventive medicine can no longer be monopolized by the salaried medical officer, the servant of the city or state health department. Until yesterday, he was the only physician (except the pediatricists) who spent much of his actual working day putting into practice the widely preached tenets of preventive medicine. Today, members of the medical profession at large, spurred on by lay organizations like the Life Extension Institute, are seriously taking up the matter of the periodical health examination,—the most practical bit of preventive medicine that they could engage in. But day before yesterday, and even the day before that, the pediatricist was preaching periodical health examination and prescribing hygienic rules of living for his little charges; and moth-

ers, encouraged by his teaching, were clamoring more and more insistently for this sort of thing for their children, at the hands of those to whom all sick folks and their friends first turn for help,—their own family physicians. Pediatrics has been the pathfinder and the trail-blazer in preventive medicine for the private practitioner, as contrasted with the publicly-maintained health officer.

There have seemed then to be two distinct, mutually exclusive fields, in which preventive medicine is being practiced; namely, folks in the mass for the public health official, and private individuals for the private physician,—wherever the latter has been willing to do this sort of work among his own clientele. There is, however, a third field, which it is the desire of the editor of this column to bring most respectfully but also most seriously and pressingly, to the attention of the practitioner who takes his responsibility as a health mentor gravely. This third field is the public school,—and especially, the public school in the smaller communities throughout our State. Here the pediatricist, or any other doctor interested in children and their welfare, may find his potential practice grouped ready to his hand, in the form of the whole childhood of the community from the age of five or six upward, all gathered together under one roof. And if the doctor interested in children really cares to improve the child health of his community, he may here exert all his force, at a most favorable leverage. He need not,—nay, he must not,—wait for an invitation from school committee or principal. In affairs of community health, the initiative rests, and of right ought to rest, with the physician. Let him but place his services, and those of his local colleagues, at the disposal of the school; and he will be surprised at the spirit in which his proffered help will be welcomed.

But what shall be the nature if this proffered help? Unquestionably the first proposal made should be for a simple outline examination of every child in the school along the lines laid down

by that master in the field of schoolchildren's health, Wm. P. R. Emerson. An enormous task, you say? By no means. A crew composed of from three to six doctors, as many volunteers from the Woman's Club or the Parent-Teachers' Association, the county health officer and his nurse, and one or two of the younger and more enthusiastic teachers detailed for the work, assisted by a flock of pages chosen from among the older pupils, can easily give a satisfactory routine examination to three hundred children in a morning,—so satisfactory that a large percentage of the gross defects can be spotted, and their existence and the need for their correction be recorded for future guidance. Of course, some definite system must be worked out; but this is a matter of organization that should prove simple to such doctors,—and they are legion,—as had army examinations to make on a large scale during the recent war. It may be worth while telling how this was done in a little community in our own State. The offer of the services of the physicians of this little town, rather hesitatingly made to the principal of the Union School by one of their number, was accepted with unexpected alacrity and enthusiasm. The field to be covered was mapped out carefully, the work being divided into two classes of "jobs." The first of these classes comprised such as only doctors could perform; the second comprised those of such a nature that they could be done perfectly acceptably by lay assistants properly instructed. The medical jobs were: (a) Nose and throat, with special reference to diseased tonsils and hypertrophied adenoid masses; (b) heart and lungs; (c) external eye diseases, skin diseases, and posture, including orthopedic defects, especially spinal deflections and flatfoot; and (d) condition of the teeth, by the local dentist. The non-technical jobs, which were such as could be performed by an intelligent woman after a little instruction and a few minutes of intensive demonstration, were as follows: (a) Testing the distant vision of each eye, by means of the Snellen test chart; (b) testing the hearing of each ear by

means of a watch ticking at a measured distance; (c) weighing without shoes or outer clothing; (d) measuring height; (e) computing expected weight for age and height of each individual child, by means of Wood's tables for boys and girls. The search for pediculi was entrusted to the nurse.

The examiners took a class at a time. The class teacher, familiar with the names, noted all the findings, and the recommendations that accompanied them. Sometimes this task was delegated by her to one or more of her brighter pupils, thus keeping herself free for the task of facilitating the marshalling of the children before and past the examiner, stationed where the light was best. No work was left to be done by an examiner, which could possibly be detailed to a teacher or a pupil. Further, no work was done by a doctor which could satisfactorily be entrusted to a non-medical examiner. In this way, the effective force of the few doctors was enormously manifolded. We shall take up later on, in this column, some of the less obvious but no less important and even vital, forms of services that may be rendered the community by its thoughtful medical practitioners to the community's most precious asset, its school children. Such services, rest assured, will be received most graciously and most gratefully, not only by those directly charged with the health of the children, but as well by the citizenship of the whole town, who will respond quickly to such an act of genuine service, generously performed. Suffice it to say here, in closing, that this bit of community service, actually offered by the physicians of one of our small rural settlements, has been far-reaching in its effects. Defects pointed out to parents have been remedied; monthly weighing of some of the children by interested teachers has resulted, carrying the lesson of caution or the word of warning in cases of stationary weight; the principal has been heartened to do more for the health of his charges, and the teachers have been encouraged by learning that their work is being watched out-

side of the four walls of the school; handicapped children have been referred to special agencies for needed correction of physical defects; and the county nurse's health program has been greatly facilitated by an aroused interest in matters of personal health. All sorts of benefits have accrued. And perhaps the best of all has been the realization, on the part of teaching force, parents, and the man on the street and behind the steering wheel of the Ford, that the doctors are interested in the health of the children of the town and the country round about, not as prospective patients, but as lives with health to be conserved. Such a simple, elementary service is almost bound to be followed by some of the more advanced and elaborate forms of help which the doctors can give. What some of these are, and why they should be given, as well as how they maybe, will form the text of some future discussions in this column.

Urology

A. J. Crowell, M.D., Dept. Editor

Sacral and Peri-Sacral Anaesthesia in Perineal Prostratotomy.

The sacral nerves can easily be blocked off by injecting a local anaesthetic into the sacral canal and sacral foramina. Injections into the sacral canal alone are usually sufficient to anesthetize the labia, prostate, bladder, rectum, anus, uterus and skin of the posterior surface of the thigh but we have obtained far better results in our prostatectomies since we began anesthetizing the hypogastric plexus of nerves by blocking off the Second, Third and Fourth pairs of sacral nerves, through the sacral foramina.

After witnessing a ureteral catheterization under sacral anesthesia by Scholl for the removal of a ureteral stone three years ago last June, I determined to give it a trial in the first perineal prostatectomy I did on my return home. It so happened shortly thereafter that we were called upon to take care of a man

over eighty years of age who had complete retention of urine, a high blood nitrogen and a low phthalein output. He was also suffering with a very bad chronic bronchitis and an extensive emphysema. The two latter of themselves were sufficient to justify us in refusing to give him a general anesthetic to perform an operation of this nature. To this was added an aortic stenosis with a mitral regurgitation and failing compensation. It appeared to us that if there was ever a case in which a local anesthetic was indicated this was the one.

After studying the nerve supply to the parts carefully and knowing Dr. Montgomery's ability to give gas-oxygen in case the sacral anesthetic did not work, we decided to try it out in this case. To our complete satisfaction, the patient did not move or complain during the operation and made an uneventful recovery. From then until the present time, we have used sacral anesthesia in every prostatectomy with one exception. This was on a demented patient who was in fine physical condition to take a general anesthetic.

For a time we depended upon sacral anesthesia as a local anesthetic and gave gas for a few moments while pulling upon the pelvic peritoneum in our efforts to deliver the gland from its capsule. This caused pain in 15 to 20 per cent of the cases and was not very satisfactory. The patient would practically always become rigid when given gas, change his position, and interrupt the operation. We then decided in addition, to block off, through the sacral foramina on each side of the sacral canal, the second, third and fourth pairs of sacral nerves, which constituted the hypogastric plexus. This has worked admirably in every case where the solution was placed accurately. Here, again, experience is profitable.

The routine procedure followed at our clinic is as follows: After emptying the bowels by enema a suppository containing one grain of opium is inserted into the rectum, one hour before the local anesthetic is given. This latter should be given in the patient's

room. After proper preparation of the skin with iodine and alcohol, the patient is placed on his face with hips elevated by pillow, the skin over each foramina and the lower end of the sacral canal is injected with a 1 per cent solution of novocain. A spinal puncture needle is inserted at a right angle to the sacrum until felt to pass through the fibrous membrane covering the sacral foramina. It is then turned and inserted for 4 or 5 centimeters up the sacral canal. The trocar is withdrawn and if blood or spinal fluid escape, the needle is withdrawn until the flow of the fluid ceases. (Precaution should be taken to avoid injecting the solution into the lumbo-sacral space through which spinal anesthesia may be induced or into a blood vessel). Thirty c.c. of a solution of novocain (of the formula Novocain 0.6, NaHCO_3 0.15, NaCl 0.10 Distilled Water 30.) is then injected slowly. If the needle is accurately placed, no resistance will be offered the solution's inflow, since the needle's opening is within a cavity. If resistance be offered the needle is probably under the periosteum and should be replaced.

The second, third and fourth foramina are then injected with a 1 per cent novocaine solution, using a fine, long needle. This is more difficult and requires considerably more practice to accurately place the solution but the parts have already become somewhat anesthetized from the injection into the canal and one can be more deliberate.

Fifteen minutes should elapse after injecting the canal before taking the patient to the operating room and 1-4 grain of morphine given hypodermatically just as he leaves his room.

The patient occasionally complains of dizziness and a sensation as though his legs were asleep,—a heavy sensation. The completeness of the anesthesia can be tested by pricking the parts. If the sensation in the skin is completely lost the anesthesia is usually perfect and the

patient experiences no pain during the operation and, as a rule, but little thereafter. The local anesthesia lasts from one to three hours. To this is added the effects of the opium and morphine. Frequently, it is unnecessary to give an opiate after operation and the patient often affirms that he suffers no real discomfort at any time following the operation.

The advantages of sacral over a general anesthetic in prostatectomy are obvious. In the first place, many critical cases can be operated upon and given the benefits obtained by prostatectomy who could not be operated upon under a general anesthetic. If sacral and peri-sacral anesthesia is safer for the feeble, it certainly should be better for the strong.

Fear is another factor to be considered. No patient should be operated upon when unduly frightened if such can be avoided. In fact, all dread possible should be removed. Practically every one dreads the anesthetic more than the operation. This is especially true of the aged. Sacral anesthesia does away with this fear very largely and especially if given as above described. The patient is so indifferent to his surrounding when taken to the operating room that he is unconcerned as to what is going on. They occasionally go to sleep while being operated upon.

The gastro-intestinal tract is not so upset following nerve blocking as it is following a general anesthetic and a more speedy recovery can justly be expected when the former procedure is used.

Conclusion

Since we have had only one fatality following the 113 prostatectomies during the time we have been using the above described plan of local anesthesia, we feel amply justified in its advocacy and in an endeavor to become more expert in its administration.

Gynecology and Obstetrics

Robert E. Seibels, M. D., Dept. Editor

The Heart in Pregnancy.

It is only within the last few years that the heart in pregnancy—particularly the diseased heart—has received critical study and sufficient cases with cardiac signs have been grouped and subjected to analysis. Herrick's study of 40 cases has already been reviewed in this department (Sou. Med. and Surg., Sept., 1922).

A point of considerable importance in Daly's study is the number of cases with systolic murmurs (70 per cent of women referred to the cardiac clinic) but for the most part with no other signs of disease and the murmurs are considered of no significance. "With the exception of the long harsh murmurs of aortitis, systolic murmurs are disregarded unless occurring as one of a group of findings indicative of organic disease."

Mitral disease is the prevailing lesion in this series—42 cases of stenosis and 48 of insufficiency—as might be expected. The post-partal result in the stenotic cases is distinctly at variance with the commonly accepted teaching that this is the lesion above all that is well-nigh regularly made permanently worse. In this report we find but one death from stenosis and one case of incomplete recovery from failure.

There was a total of 1177 cases of organic heart disease among 4040 patients delivered. Among these there were 19 failures of compensation; 13 failed during pregnancy, carried their pregnancy to completion and had no further trouble, labor and delivery causing no serious embarrassment. Five failed during both pregnancy and labor and only one suffered any serious embarrassment during labor alone. In five cases auricular fibrillation occurred, four of whom returned to normal rhythm and one persisted. Of the total failure 15 recovered completely (96 per cent) and 4 did not, with only one death—mitral

stenosis delivered by abdominal section and developed acute suppression of urine.

In agreement with Herrick, he draws certain conclusions from this study. The prevention of difficulty in the cardiac complications of pregnancy is to be accomplished early in pregnancy by adequate rest, suitable diet and the restriction of fluids. Compensation is to be established by the use of digitalis and proper regime when failure takes place: abortion or delivery in the presence of failure of compensation—unless the patient is in labor—is unwise, "because any interference is an insult to the overwhelming cardiac muscle." There is no material cardiac damage brought on by pregnancy. Delivery from below, after spontaneous labor, with ether anesthesia, is the method of choice, in the absence of obstetric complications. (The work of the second stage should be largely spared the patient and she should be delivered by forceps as soon as the cervix is dilated.—Editor.)

Daly, P. A.: J. A. M. A. 82, 1439, 1924.
Herrick, W. A.: A. J. Obs. & Gyn. 4, 1, 1922.

Mental and Nervous

James K. Hall, M. D., Dept. Editor

Traumatic Therapy (?) In Psychiatry.

DR. CYRUS THOMPSON

Jacksonville, N. C.

Dr. J. K. Hall, Sept. 24, 1924.

Richmond, Va.,

Dear Dr. Hall:

I read the other evening, with a great deal of interest, what you had written in September "Southern Medicine and Surgery." * * * * * That part of your comments which noted "the effect of physical injury on the insane state," called to my mind an incident which occurred at my father's house a little while after the Civil War.

We had about the house a negro girl named Teena, who after the slaves were

freed wandered off into another part of the country and soon thereafter became pregnant; was delivered of the baby, which she was accused of strangling, and directly became insane. Somehow or other, she came back among her people who were living on a farm about three-quarters of a mile up the road from my father's. A trusted negro man named Dan, a foreman on the plantation we had about four miles from home, was standing by the piazza talking to my father who was seated on the piazza. Teena was wandering about in the yard and nobody was taking any particular notice of her until she went to the woodpile, picked up an axe, and came talking threateningly towards Dan. He did not notice her until she was pretty near on him, when he broke into a run and Teena after him. My father, fearing for Dan's safety, jumped out of the piazza, picked up a hand-spike (log rolling) and followed after them for Dan's protection, in case she hemmed him. Dan made to the picket fence on the road, and like a deer cleared it and went running. Teena stopped, laughed and commented on his jumping. My father thought that the trouble was over, but Teena directly turned and came towards him with the axe. He stormed to her to drop the axe and not to come any further. She came on, uncomfortably close to him, whereupon, the old gentleman leveling the hand-spike in both hands, threw horizontally at Teena's head. Seeing it coming, she turned and ducked, and the hand-spike struck her on the back of the head, quartering, and knocked her over. She immediately dropped the axe, turned toward the gate and walked up the road. When she got to her kinspeople, she complained of her head. They noticed that it seemed to be swollen on the back and asked her what was the matter. She replied, "That man hurt me." The next day her mental condition was very much better, and she went on to uninterrupted recovery. I do not know how long it was after that before I lost track of her, but several years at least; and the last I heard of her, Teena was "clothed and in her right mind." Of course, it

was rough treatment, but apparently very effective. It could be used on the principle of "safety first."

I thought, perhaps, this incident of some fifty-six or fifty-seven years ago might be of interest to you, and, incidentally, I remark that one of the pleasures of old age is the long memory behind us.

With every good wish for you. * * *

Sincerely yours,

Cyrus Thompson.

The Gastric Juice and Spinal Cord Disease.

Little seems to be definitely known about the origin of the hydrochloric acid-content of the gastric juice. It must come out of the blood, yet that fluid is alkaline, probably always. The normal gastric juice is, however, acid, and strongly so. Every person who has experienced the discomfort attendant upon vomiting knows that. Most of the acidity of the juice is due to the presence in it of free hydrochloric acid. This acid helps not only to make possible gastric digestion, but by its presence it helps, also, perhaps, in the destruction of bacteria, millions of which must gain access to the gastric interior, and the acid is helpful, also, in preventing fermentative changes in food which must carry with it the formation of toxic bodies. The presence in the gastric juice of hydrochloric acid in rather abundant quantity would seem, therefore, to be at least desirable and helpful. Yet this acid is not infrequently entirely absent.

Vander Hoof, in reviewing his records recently, finds that in 4,281 consecutive patients in whom a gastric analysis was made that 451 of them showed no free hydrochloric acid at all. This is somewhat more than 10 per cent; 29 of these 451 patients presented clinical evidence of combined sclerosis of the spinal cord. Of these 29 cases 14 had pernicious anemia, one had pellagra, and in 7 the study did not result in a satisfactory classification. But 7 of the cases presented such symptoms as to justify the diagnosis of combined scler-

rosis of the cord-involvement in both the lateral and the posterior columns of the spinal cord. A detailed study of each case is presented by Vander Hoof. One patient was 42 years of age, but the other six were well beyond 50. Two of the patients only were women. In all the patients in the series no free hydrochloric acid was found in the gastric juice. In most of them more than one analysis was made. Most of them showed infection either about the teeth or in the tonsils. None of them exhibited evidence of syphilitic infection either clinically or serologically. The condition from which each of these patients was seeking relief of the physician was a troublesome and annoying change in sensation in the extremities—a paresthesia. The symptom was described as a burning, tingling, or numb feeling beginning usually in the feet and creeping upwards sometimes as far as the waistline. Not infrequently the hands and the remainder of both upper extremities were, likewise, involved. These symptoms are frequently observed in association with pernicious anemia, but in these 7 patients Vander Hoof could find no blood evidence of that grave malady. Such sensory disturbances as those described were often accompanied by motor change—spasticity, flaccidity, and even when these conditions were absent, sometimes simply by evidences of muscular incoordination. The treatment of the condition consisted in clearing out discoverable foci of infection and in the administration of large doses of the official dilute hydrochloric acid during meals. The acid was given in butter-milk, preferably, or in lemonade, orange juice, iced tea, or plain water. A teaspoonful of the acid was given at a dose. Four of the patients practically recovered from all symptoms; one discontinued treatment and did not improve; another grew worse, but he took the acid irregularly and finally stopped it; and another who took the treatment systematically died after more than two years of progressive cord changes.

Vander Hoof discusses in some detail the pathology and the symptomatology of sclerotic changes in the posterior and

in the lateral columns of the cord. Changes in the posterior column cause the creeping-up sensory disturbances spoken of, while sclerosis in the lateral columns brings about motor changes. He calls attention to the well-known facts that pernicious anaemia has associated with it practically always gastric anacidity and, also, disorders of sensation. It has only lately been discovered, however, that cord changes alone, such as those referred to by the term combined sclerosis, carry with them absence of hydrochloric acid in the gastric juice. Vander Hoof thinks of some underlying toxic condition as the basis of the anacidity as well as of the cord changes. In pernicious anaemia, for example, the blood changes may be due to a toxic substance which has an affinity for the blood as well as for nervous tissue. In combined sclerosis of the cord the theory is suggested that the toxic substance elaborated has an affinity only for cord tissue.

Vander Hoof's contribution is suggestive and valuable for several reasons. It presents another evidence of the helpfulness of routine laboratory investigation of conditions of obscure origin. It constitutes another proof of the comparative ease with which certain problems can be approached by the aid of rather simple mechanical appliances. The frequency with which the elaboration of gastric hydrochloric acid is disturbed is, also, emphasized. The case reports make plain, too, the advisability of looking far away sometimes from symptoms for the discovery of their causes. Finally, the study would seem to prove that therapy, even when administered by mouth, is not altogether useless in these modern days of drug nihilism and psychoanalysis. The contribution is before me in reprint form, but it was read before the Association of American Physicians in Atlantic City in May, 1923, and it was published in the Archives of Internal Medicine, December, 1923. The title of the contribution is: The Etiologic Relation of Achylia Gastrica to Combined Sclerosis of the Spinal Cord. The Relief of Symptoms following Adequate Hydrochloric Acid Therapy.

News Items

The One Hundredth Session of the Medical College of the State of South Carolina was opened in the auditorium of the college at Charleston, S. C., on September 22th. Several distinguished guests were present. Addresses were made by Dr. Robt. Wilson, dean; Dr. W. M. Zeigler, chairman Faculty of Pharmacy; and Gov. Thomas G. McLeod.

The Dean welcomed the students and outlined the history of the college, and called upon them to emulate the achievements of the distinguished alumni who had preceded them.

Gov. McLeod spoke on the advancement of education in general and called attention to the manner in which the recent establishment of many new high schools had aided the colleges in raising their standards. He called attention to the fact that the work of the physician, the pharmacist and the nurse were not rewards of money alone, but that human suffering might be alleviated and ethics and morals be elevated.

Dr. W. H. Zeigler, who has recently been elected President of the American Conference of Pharmaceutical Faculties then addressed the students. Dr. Zeigler is professor of Materia Medica and

Pharmacology, he is also a member of the Revision Committee of the United States pharmacopoeia. He stressed the professional standards of pharmacy; the standards which were to be demanded of the students; and offered the personal co-operation of the faculty, concluding with quotations from Frank Crane's "Teachers Prayer."

The enrollment of the freshman medical class includes a greater percentage of degree men than ever before. Inquiries were received from all but nine states in the Union. Sufficient applications to fill the class were received within less than a month of the close of the last session.

This years junior class is the last one on which the degree Phar. G. will be conferred for a two year course, hereafter it will require three years for the pharmaceutical degree. Though strict college entrance requirements have been enforced for the pharmacy course, the classes have been filled with increasing readiness. Quite a percentage of the applicants have college work.

In the Nursing course the practical work is done at the Roper Hospital and the lectures are given by the college faculty, the nurses having the facilities of the laboratories in their training. The student nurses of other local training schools, the Baker Sanitorium and the St. Francis Infirmary are accepted as special students.

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New Evidence on Calcium Therapy in Tuberculosis.

The value of Calcium in Tuberculosis has been the subject of much debate. On one hand existed the opinion of the practitioner, based on isolated cases. On the other, and opposed to it, was the academician, who by animal experiments, was unable to demonstrate the clinical effect claimed by the practitioner. A few clinicians were inclined to believe in the value of Calcium, but were unable to demonstrate sufficiently uniform results to enable them to come to definite conclusions as to its value.

This State of knowledge of the value of Calcium is not unique in therapeutics. The same condition exists as to the value of other remedies, used empirically and administered by mouth.

A change of opinion as to the value of Calcium has been brought about by the intravenous administration. Loeser, in his research work with a number of U.S. P. and standard remedies, ascertained that Calcium Chloride and Calcium Guaiacol Sulphonate, and other Calcium salts are adaptable to intravenous administration.

Since the standardization and the commercializing of Loeser's Intravenous Solution of Calcium Chloride, many practitioners and a number of clinicians have proved conclusively that Calcium is of great value in Tuberculosis. During the last three years an increasing number of articles have appeared in the J. A. M. A. and in other medical journals on the subject. The American Review of Tuberculosis published in their April Number an article on Calcium Chloride in Tuberculous Enteritis. This is a report of clinical work done in the Fitzsimmons General Hospital, Denver, Colorado, and was published by permission of the Surgeon General.

Abstract of this article and an assembly of additional information on the subject of Calcium intravenously in Tuberculosis can be obtained by addressing the New York Intravenous Laboratory, 100 West 21st Street, New York.

A MATTER OF CRITICAL IMPORTANCE.

A point worthy of serious consideration has been brought out in recent discussions of the obstetric dose of pituitary extract. It is that unless the extract itself is of uniform activity, one make being assayed by the same standard as another, there can be no fixed dosage, not even a safe dosage, of the product as supplied by different manufacturers. The point is sustained by tests which show that some specimens on the market are three or four times as active as others. It would seem, therefore, desirable, in the interests of safety and efficiency, for the physician to do one of two things: either adopt one make of pituitary extract and stick to it—Pituitrin, for example—or, ordering in original packages, be guided by the dosage recommended by the manufacturer, whoever he may be. The advantage of the former method is obvious: the physician has one pituitary product for all occasions, one that he can rely upon as a result of his acquaintance with it and with other products of the same house.

It is hardly possible to translate the dose of one pituitary extract into that of another, the different standards being unknown; the physician must, in practice, depend upon the manufacturer and his own experience. A pituitary extract can be dangerously active as well as hopelessly inactive; the sine qua non is a combination of activity with relative safety, and above all UNIFORMITY.

SEPTIC INFECTION.

Gradually but none the less surely physicians are realizing the life-saving value of iodine in the treatment of septic conditions. To accomplish the results desired it is necessary, however, to give iodine to effect. To do this it is essential to use a preparation that will not upset the digestion nor give rise to other disagreeable effects, and it is the notable virtues of Burnham's Soluble Iodine in these respects that account for the rapidly growing use of this product

in the treatment of septic infections. Improvement in the temperature, respiration and pulse is the guide. The dose depending on the gravity of the case should vary from 10 to 100 minims every hour or two until conditions improve, then lessen dose. In severe cases it is given preferably by hypodermatic injection, full strength, very deep into gluteal muscles and repeated until temperature subsides, then diminish dose. The class of cases in which these large doses intramuscularly are usually necessary are puerperal sepsis, septicemia, pyemia, pulmonary abscess, septic peritonitis, etc. It goes without saying that the dose must be large to stimulate the resistive forces of the body and produce the antitoxic effect desired. Very rapid and brilliant results may be expected, however, if this method of administration is followed. Many an otherwise hopeless case has been saved by this line of treatment.—Adv.

Well informed physicians are coming to question the absolute efficiency of the vaginal douch, except as a merely cleansing procedure. To bring and hold indicated medicaments in close contact with the irritated or inflamed surface, calls for the use of an agent like MICA-JAH'S MEDICATED WAFERS, which are effective, easy to use and economical. The wafers contain astringent, antiseptic, antiphlogistic, soothing and healing agents which upon the gradual solution of the wafers are brought into close contact with the parts, so that they can exert their full therapeutic effects.

Another advantage is that while the wafers are intended to be introduced by the physician, if necessary the patient can be instructed how to use them herself in the intervals between her visits to the doctor's office.

The wafers are entirely without any irritating or toxic action and their effect is prolonged, so that the practical results are assured. Any physician who is not acquainted with this most useful preparation should write for a

sample and literature to Micajah & Co., 151 Conewango Ave., Warren, Pa.

An Expedient to Control Epistaxis

Joseph G. Levine, New York (Journal A. M. A., Jan. 19, 1924), stops this bleeding by the use of an ordinary rubber finger-cot about the size of the index finger or smaller. Its exterior is covered with a bland lubricating jelly to make the insertion and removal easy; then it is grasped with the nasal forceps and inserted into the bleeding nasal cavity, the blind pouch end foremost, as far as it will go, with the open end just protruding from the nasal orifice. A one-half inch strip of plain gauze is then packed into the rubber encasement as firmly as possible with the nasal forceps, while the finger-cot is held from sliding in. The bleeding is effectively controlled, because the gauze packing cannot become blood soaked and loosen, while the elasticity of the distended finger-cot distributes the force of pressure evenly in all directions. It is not necessary to remove this packing within twenty-four hours, because the protection afforded by the rubber finger-cot to the gauze prevents it from soaking up sapremic exudates and blood that often induce infection of the bleeding site and promote further hemorrhage. The removal of the package is simple and not discomforting. One first removes the gauze, and then slides out

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GASTRIC AND DUODENAL ULCER FROM THE MEDICAL VIEWPOINT.

D. Heath Nisbet, M.D., Charlotte, N. C.

In any discussion of gastric and duodenal ulcer it is well to consider their etiology. Practically the same theories have been advanced for both conditions and they will be considered together. The best known theory is, that the action of the acid gastric juice on the damaged or weakened mucosa of the stomach and duodenum, causes breaking down and ulceration. This is supported by the observation that 95 per cent of all ulcers occur in those areas where the acid juice is in contact with the mucosa, namely, the pyloric portion of the stomach and the first portion of the duodenum. It is well to remember, however, that ulcer occurs where acid values are normal or even entirely absent. The fact that a low or normal acid is not found does not prove that it was not high at one period during the development of the lesion and further, a normal acid might be corrosive to a constitutionally weak mucosa.

Injuries to the different portions of the brain and cortex, causing local contraction of the small arterioles of the pyloric and duodenal regions with ulcer formation, has been noted in experiments, by Schiff, Ebstein, Nothnagel and Brown Sequard. The above condition plus the action of certain toxins is advanced by Morris.

Virchow and Talma showed that certain vagus lesions causing spastic contraction of the muscularis, resulted in ulcer formation. Lichtenbelt proved that irritation of the vagus and sympathetic produced ischaemia and that this was followed by ulcer. Eppinger and

Hess have shown that the vegetative nervous system plays a part, at times. Roessle notes the occurrence of the disease in connection with lesions of other abdominal organs, as gall bladder disease, appendicitis and constipation. The infectious theory, of blood borne streptococci, is championed chiefly by Rose-now. Sippy and Lyon emphasize the importance of infections in the paranasal sinuses, teeth and gums, which drain into the stomach and undoubtedly cause infection. Stiller claims that gastrop-tosis and atony with delayed emptying time, allows the gastric juice to stay too long in contact with the gastric mucosa and causes ulcer. Others think, in duodenal cases, that it may be due to pressure of the liver, gall bladder and pancreas.

With these and many other theories advanced, and none of them definitely proven, we must face the fact that ulcer of the stomach and duodenum is not a simple, local disease but a complex affair, and that it should be considered as such in the diagnosis and treatment. Smithies thinks that very little progress has been made in treatment, in many years, due to the lack of investigation of the causes of the systemic upset, preceding or accompanying the local gastric or duodenal condition. He called attention eight years ago, to the fact that we are dealing with a form of systemic or constitutional disturbance, in which the ulcer is the local gastric or duodenal complication.

Ulcers occur more frequently in men than in women, and most often between the ages of 20 and 40. They attack those who apparently are in the best of health and nourishment. It is well to remember that a person developing a stomach complaint after 30 is dangerously near the cancer age, and the condition should be thoroughly gone over. Careful stomach tests, should be made

and most important of all, an X-ray study should decide the exact nature of the lesion and its location, if one is present. This should apply to all cases of gastric disorder, where the diagnosis is doubtful, because in a large percentage of all cases, it will either prove ulcer or absolutely rule it out. There are some cases where X-ray will not demonstrate the ulcer but these can be diagnosed from the history and the clinical findings and should have the benefit of ulcer treatment.

The clinical symptoms vary within wide limits. They may date back to early life, coming on periodically, or they may be relatively recent. A feeling of fullness and pressure in the epigastrium and belching of gas, may be the only complaint, but it is important to remember that even with these few symptoms, they usually occur, not during, but 2-5 hours after the meal is taken. Some cases are ushered in by a severe hemorrhage. In gastric cases by hematemesis. In duodenal cases by bowel hemorrhage. Both conditions occur less frequently than was formerly supposed. Other cases may have the typical symptoms of pain 2-5 hours after meals, a painful sensation of hunger and the night pain which occurs rather strikingly at 12 and 2 a. m., all these symptoms are usually relieved by taking food, water or alkalies.

The physical examination may or may not help us. In many cases it gives us no significant information. The finding of a tender pressure point above and to the right of the umbilicus is very suggestive of pyloric involvement.

The fractional stomach analysis is a distinct aid. We must remember, however, that in a large series of cases of proved ulcer, only 30 per cent showed an increase in acid, 45 per cent were within normal limits, and in 25 per cent it was low or absent. Where there is obstruction to the pylorus and retention of food elements information of value may be obtained by taking the fasting contents 12 hours after a motor meal. The finding of more than 2 ozs. points to obstruction. Occult blood is found in a small percentage of cases and is of value

where no meat has been taken for several days and where trauma due to swallowing the tube can be ruled out. The string test of Einhorn, we do not use, and many believe its importance is exaggerated. Occult blood in the feces is important, where local bleeding in the intestines, and in the rectum from ulceration or hemorrhoids can be explained. All cases should take atropine till the physiological effect is obtained, i. e. dry mouth and dilatation of pupils. If the lesion is due to ulcer, the irregularity will not clear up. If it is due to muscle spasm it will become smooth. We find that about 40 per cent of all irregular pylori and duodenal caps will smooth out with test. The differential diagnosis is difficult here, as in all other intra-abdominal condition. It is well to consider gall bladder disease, appendicitis, functional gastric conditions, peri-pyloric and peri-duodenal adhesions epigastric hernia.

Given a case of proved gastric or duodenal ulcer, just what types are we justified in giving medical treatment, and which should be declared surgical? I will answer by giving the indications for surgical treatment. 1. Where we have reason to believe that carcinoma is developing at the seat of the ulcer. 2. High grade pyloric obstruction, due to thickening of the tissues, which fails to yield to the medical treatment to be outlined later. Sippy believes that 85 per cent of all cases of pyloric stenosis, due to peptic ulcer, disappears after 2 or three weeks of medical treatment. 3. Perigastric or periduodenal abscess or adhesions causing obstruction. 4. Perforation into the peritoneal cavity, or massive hemorrhage. 5. Hour glass stomach. 6. Where ulcer is due to a nerve lesion, no treatment will be of any benefit except excision of the ulcer bearing area.

In advocating surgical intervention I believe that the ulcer bearing area should be excised wherever it is possible. We see many cases of gastroenterostomy which have failed to give relief.

Before going on with the treatment, we should determine whether other foci

of infection are present and investigate carefully the para-nasal sinuses, teeth, tonsils, other intra-abdominal conditions as appendix, gall bladder, prostate gland and female pelvis.

In discussing the medical treatment, I wish first to mention briefly the various treatments which have been tried out and then in some detail to outline which we follow.

The strict diet of Leube is useful only in bleeding cases. The Lenhartz diet is not used very extensively in this country. Einhorn, Gross and Held are advocates of duodenal feeding. Kauffman uses large amounts of silver nitrate to control the acidity. Coleman advocates using foods which do not stimulate the flow of gastric juice, controlling the discomfort by large doses of bismuth. Smithies has recently advocated giving no food by mouth for 3 to 7 days, with rectal feeding during this period; then the extensive use of carbohydrates and starches, predigested milk in small amounts and little if any alkalies. Sippy's modification of Dubose's method of alkalization, to which he has added the use of the duodenal tube in removing excessive amounts of gastric juice, is perhaps the most widely used and most successful treatment we have today.

The treatment I use is a modification of the Dubose-Sippy method being a little less complicated. Rest in bed is insisted upon for three to five weeks. The medication consists of an antispasmodic of tincture of belladonna and hyoscyamus three times daily before meals. Two powders are used, being given alternately after each feeding in teaspoonful doses. Powder No. 1 consists of equal parts of sodium bicarbonate and bismuth subnitrate. Powder No. 2, of equal parts of calcined magnesia and bismuth subnitrate. The diet during the first week is three ounces each of milk and cream every two hours, eight feedings being given daily. In the second week, three raw eggs are added to the milk feedings and two cereal feedings are given in addition. The third week, additional allowance consists of all cereals, baked white potato, light sweets as, gelatin, ice cream, cup custard, etc.

The fourth week, rare steak twice daily (only the juice being swallowed), puree of vegetables, chopped chicken and toast. During this last week the patient is allowed to sit up for a short time each day.

Spasm and pain are controlled by hot packs to the abdomen, which are given for twenty minutes as many times daily as needed. The magnesia will usually control the bowels. When it proves too laxative substitution of the bismuth soda powder can be made for the one containing magnesia. Before the patient leaves the hospital, an X-ray check up should be made to determine the amount of improvement, judging by the size of the lesion, the amount of spasm and the change in the deformity.

In giving the final instructions to the patient, we must emphasize the fact that the ulcer is not entirely healed and that it will be necessary for him to follow the same type of diet with the medication for six to eight months. And further it will be necessary to report at stated intervals for study and X-ray checkup to note the progress being made. I believe that many of the failures in treating ulcers by medical methods is due to the fact that the follow-up system is not used and they are not given definite instructions as to their diet after they go home. The same applies to certain operative cases where gastro-enterostomy has been done, or where the ulcer-bearing area has not been removed. These patients should be referred to a competent internist for regulation of the diet.

Conclusions.

1. Each individual patient should be studied as an entity and all possible foci of infection should be eliminated.
2. The X-ray is the most valuable single diagnostic test that can be made, provided it is in the hands of a skilled operator.
3. No diagnosis of ulcer should be made until the patient has taken atropine until the physiological effect is obtained.
4. The diet and medication should be continued for six to eight months after the patient is discharged.

5. The indications for surgical treatment of ulcer are very definite. All cases of acute ulcer, or uncomplicated cases should have the benefit of careful medical treatment before operation is advised. On the other hand, if medical treatment has been given and there is no improvement, or cessation of symptoms, operation is advisable. The operation should in all possible cases remove the ulcer-bearing area.

GASTRIC AND DUODENAL ULCERS.

By Addison G. Brenizer, M.D., Charlotte, N. C.

The public must be cared for by a harmonious, rather than by a discordant profession.

This initial remark is made apropos of the widely discrepant statements made by those medical men, physicians and surgeons, who have taken part in the many symposia and discussions of the subject of gastric and duodenal ulcer.

Most of what we know has been learned since I left Hopkins seventeen years ago; and, prior to that time, practically nothing was known about duodenal ulcer, and most of the knowledge of gastric ulcer, came from the postmortem table. Gastric ulcer was considered the commoner disease, easily diagnosed on finding certain symptoms and duodenal ulcer was considered to be rare, the diagnosis difficult or unattainable.

In reality a "chronic ulcer" of the stomach or duodenum is a visible and palpable lesion present for months or years. In it are seen evidences of destruction and of stubborn repair, there is a crater of varying size, the ulcer involves at least the muscular coat and sometimes all the coats, the adhesion of the ulcer base to the neighboring structures presents a gradual perforation.

In these ulcers there are intervals of freedom of activity; an ulcer in the callous state becomes more active at the edges or the development of acute ulcers around the chronic ulcer or in an area of the stomach apposed to it. A

healed scar breaks down at times: acute infection may arouse activity in a dormant ulcer.

In "acute ulcers" are found chaps, fissures, erosions or extensive surface destruction of the mucosa or deeper layers. The vascular supply may be impeded, making a defenseless area which the gastric juice attacks. A heavy infection or toxemia makes these ulcers develop rapidly and they probably heal rapidly. Hemorrhages or perforations show their clinical importance. Acute ulcers may be multiple. A chronic ulcer may begin in an acute ulcer that refuses to heal. The chronic ulcer in the stomach or duodenum causes the severe, protracted and recurring attacks.

The term "juxta-pyloric" ulcer is unnecessary as the ulcer is either in the stomach or in the duodenum. A duodenal ulcer is usually half an inch or more from the pyloric vein and the pyloric white line, but may extend up to or beyond into the stomach and then take on the significance of a gastric ulcer.

A gastric ulcer is rarely within an inch and a half of the pylorus and is generally found on the lesser curvature of the posterior surface. The ulcer very rarely begins exactly at the pylorus.

It is being more generally accepted that several factors are concerned in the cause of the ulcer and that of the lesion in the stomach and duodenum, the ulcer in the stomach is the more serious on account of the greater uncertainty of diagnosis, the greater tendency to cancerous changes and the more difficult operations required therefore, for its more radical handling.

Early writers laid great stress on circulatory disturbances as the main factors in the cause of gastric and duodenal ulcers. Virchow called attention to embolic occlusion of one of the gastric arteries, resulting in an area of degeneration. This theory was overthrown by various writers who showed that the free anastomosis of the gastric artery was such as to preclude the possibility of an embolus sufficient to cause enough local anemia to produce ulceration or erosion.

Then Rokitsky argued for a stasis from venous thrombosis as favoring intestinal hemorrhage, affecting the mucosa and submucosa, and thus producing an area of minor resistance on which the ulceration developed. With continued investigations experimental and clinical there finally arose the theory of infection and of obliteration of the gastric secretion as the primary factors in producing the ulcerated areas.

The theory of infection has been elaborated by the researches of Rosenow. Clinical experience has been indicating during the past few years that in a very large number of cases of gastric and duodenal ulcers, the original focus of infection lies in the appendix. Moynihan was one of the first to call attention to the relationship existing between the appendix, gall bladder and these ulcers. His view is stoutly upheld by John B. Deaver.

It is pretty well acknowledged that some change in the chemistry of the stomach goes hand in hand with ulcer, the change usually being an over-acid condition. While the consensus of opinion seems to be that hyperacidity is first present, it, nevertheless, would seem that the ulceration, once formed, without doubt maintains an over acidity and an over secretion. In other words, hyperacidity may act in preparing the way for the action of whatever secondary factors, usually of an infective or toxic nature, which may in turn prompt a further hyperacidity and secretion. Clinical symptoms of ulcer of the stomach are:—pain, vomiting hematemesis; pain being the most important. In the same patient after the same meal the same pain regularly appears after the same interval of comfort. The rhythm of the pain deserves attention. In gastric ulcer the rhythm is:—food, comfort, pain, comfort and the same repeated; in duodenal ulcer it is:—food, comfort, pain and the same repeated. In gastric ulcer the pain following the comfort produced by food appears earlier, in 1 1-2 hours to 2 hours, and does not last so long, not up to the taking of the next meal as is the case in duodenal ulcer.

Hematemesis often indicates gastric ulcer. Hemorrhage, however, merely means a considerable lesion of the esophagus, stomach or duodenum. Such a lesion in the stomach may be an acute or chronic ulcer. Hematemesis may be due to toxemia of appendicitis or other infections, to cirrhosis of the liver and to splenic anemia and so does not always indicate a chronic gastric ulcer. In duodenal ulcer hematemesis and malena may occur, the latter being more frequent and greater in quantity.

Study of the clinical history allows a confident diagnosis of duodenal ulcer. A gastric ulcer on the other hand is much less common and there should be hesitancy in diagnosing.

In cases of gastric ulcer, other methods of examination than clinical history may give light. A diagnosis of gastric ulcer upon clinical evidence may be accepted if confirmed by the radiologist. Unless a gastric ulcer is seen, its presence is never certain. A diagnosis of gastric ulcer should only be made where there is certainty. A thorough confirmatory X-ray study should be made in both gastric and duodenal ulcers, accepted more presumptively on the basis of the deformities of the duodenal cap in the case of duodenal ulcer, but only on the basis of the "niche" and "notch" opposite in the case of gastric ulcer.

After special examination for gastric or duodenal ulcer and before treatment is planned, medical or surgical, a general survey of the patient by a reputable internist must be made and notice given specially to sources of infection in the mouth, the accessory sinuses, genito-urinary tract, rectum and colon.

Careful medical treatment generally alters the gravity of the symptoms in a short time. The pain will disappear and one can take simple foods. The "attack" of gastric ulcer ends in two or three weeks. The symptoms seem to disappear as soon as the ulcer shows signs of healing; the ulcer remains large and unhealed and becomes "latent." Medical treatment must be carried out in ignorance of the exact condition in any ulcer and of the associated infections within the abdomen. In 718

cases reviewed by Moynihan the appendix was removed 307 times and the gall bladder 23 times. The writer regarded disease of the appendix as a primary source of infection. The colon seems in some cases to play a part in the causation of gastric diseases. The inter-relationship of abdominal diseases is still surmised rather than known.

Medical treatment is of value as a temporary solace, of postponing of discomfort or of impending dangers rather than as a cure.

Medical treatment loyally followed during an "attack," and after, seems unable to prevent recurrence of symptoms in many cases. Many of them turn to the surgeon for relief at a late hour. The cure following such treatment may last from a few months to a few years. The writer has not met with half a dozen patients that have not had recurrence. A scar in the stomach or duodenum of a patient operated for a disease elsewhere in the abdomen is very rare.

In the recurrent "attacks" catastrophes may appear suddenly. If hemorrhage occurs it may be arrested by rest in bed, abstinence from food, intravenous injection of calcium chloride, or blood transfusion until the patient can risk operation.

Records from the Leeds Infirmary for the last ten years show: of gastric ulcers 75 deaths were due to hemorrhage or perforation and peritonitis. These catastrophes may occur in "acute" or "chronic" gastric ulcers. There were 61 deaths from perforation, in 60 cases the ulcer was of chronic type. There were 14 deaths from hemorrhage; 13 were chronic ulcers, one was acute and a terminal condition in advanced cardiac disease. It is the chronic ulcer in an acute stage that bleeds or perforates and causes death.

During the same period there were 129 deaths from hemorrhage from a duodenal ulcer or from perforation. There were 12 deaths from hemorrhage, in each case a chronic ulcer. There were 117 deaths from perforation. Twelve of these were acute ulcers. In four of the twelve, chronic ulcer was

present and had perforated, the acute ulcer being incidental. The remaining 105 were chronic ulcers. Perforation is found more commonly in cases of chronic ulcers. Patients are brought to the hospital in a moribund state after the catastrophe has occurred. Records show that the majority of patients have had treatment on several occasions.

In case of gastric ulcer treated medically the problem of carcinomatous degeneration at the edge of a simple ulcer must be considered.

In cases of cancer of the stomach two out of three give a history suggesting gastric ulcer. In some such cases an ulcer, usually chronic, may be found at the time of operation. Naked-eye examination reveals no malignancy, but the microscope shows early malignant changes at one edge only of the cancer. This has been the case in 18.5 per cent of the supposed chronic ulcers. Again a chronic simple ulcer may be seen, with one edge thickened, upraised, red and softer than the normal rigid, steep or overhanging edge. This part shows carcinomatous changes. In one case one patch showed columnar carcinoma and another scirrhous at opposite edges. The symptoms of duodenal ulcer may be unequivocal and persistent on and off for years. At the operation the old duodenal ulcer is seen to have transgressed the pyloric line and the gastric edge of the ulcer is malignant.

Examinations of specimens from gastrectomy performed in the early stages of carcinoma give the only trustworthy evidence of the incidence of cancer in ulcer.

The writer is anxious as to the destiny of any patient suffering from gastric ulcer. If the change from simple disease to a malignant is possible, gastrectomy in cases of chronic gastric ulcer has advantages over any other operation. The real chronic ulcer is a rare disease, if the clinical diagnosis alone is accepted, the proportional incidence of carcinoma among such cases is certainly small.

In the case of gastric ulcer, does the medical treatment often permanently heal the ulcer? We must first know

that the ulcer has been present, with evidence more than clinical, secondly, whether radiology which confirms the diagnosis now shows that the ulcer is healed, and thirdly, that the healed ulcer has not broken down later. There is almost no testimony that fulfills the essential conditions.

The dangers of medical treatment are formidable. The mortality is greater than in surgical treatment, even though only the more serious cases are submitted to operation. As regards the risk to life or recurrence of suffering, medical treatment is far less effective and more dangerous than an operation. Medical treatment should be raised to a general level of efficiency and safety equal to that which surgical treatment has reached. The occasional scars of chronic ulcers of the stomach or duodenum in the postmortem room show the ulcers can be induced to heal and perhaps to remain long healed.

Acute gastric or duodenal ulcer is the province of the physician not surgeon, except when accompanied by recurrent hemorrhage or perforation.

My present report covers 67 cases with two deaths; one death two years later from a cancer grafted upon a gastric ulcer which was bleeding at the time of operation, but could not be found. The bleeding stopped later after a gastro-enterostomy. The other death was in the case of an old woman who had been bed-ridden for years with rheumatism and a very bad heart which at times was decompensated. She had a perforation of a chronic gastric ulcer on the posterior surface into the pancreas. After resection of the ulcer and closure of the hole in the pancreas, she died on the table from heart failure. This heart failure while greatly regretted was not unexpected.

Using 19 very recent cases for their illustrative values I have compiled the following data:

1. Ulcer confirmed clinically, confirmed by X-ray, found at operation: 8 cases.

2. Ulcer confirmed clinically, not confirmed by X-ray, found at operation: 2 cases.

One of these was a perforation after negative X-ray study, the other was a carcinoma on ulcer base with loss of 43 pounds.

3. Ulcer confirmed clinically on account of hemorrhage, hematemesis, not confirmed by X-ray, not found at operation: 3 cases.

Two of these cases stopped bleeding and got well following gastro-enterostomy, the other died two years later of cancer of the stomach.

4. Ulcer not confirmed clinically, found by X-ray, not found at operation: 3 cases.

One of these was an adhesive gall bladder with stones bound down tight to the duodenum and a portion of the duodenum puckering between adhesions, thus producing the artefact of an ulcer. The second case was an obstruction due to adhesions and kink at the duodeno-jejunal junction. The third case was a very high lateral cecal appendix, with numerous adhesions pulling down on the duodenum.

5. Ulcer not confirmed clinically, not confirmed by X-ray not found at operation: 3 cases.

Two of these cases showed retro-cecal appendices with widespread adhesions in region of cecum and ascending colon. The third case showed the same thing with a markedly dilated cecum, adding weight to the pull of the adhesions. This cecum was plicated.

These data would indicate that an accurate diagnosis by employing history, clinical and X-ray examinations, can be made in about 80 per cent of cases. That a presumptive diagnosis where either clinical or X-ray examinations are at variance can be made in about 90 per cent of cases. That an accurate diagnosis cannot be made either clinically or by X-ray in about 10 per cent of cases and that the gall bladder or the appendix will usually explain the condition in these cases.

The following operative procedures have been employed in these 67 cases:

(a) Gastro-enterostomy—In a few of these cases there has not been complete relief of symptoms; one case died

two years later of a carcinoma of the stomach, not found at operation and therefore not resected. Most of these stomachs emptied very rapidly after operation and there has been some complaint from colitis. There has been no recurrence of hemorrhage and the ulcer seems to have healed.

(b) Gastro-enterostomy—After resection of the ulcer. These patients have been completely relieved of all symptoms.

(c) Pyloroplasty and resection of ulcer. These patients have been completely relieved.

(d) Resection of pylorus and Billroth No. 2—One of these cases showed carcinoma on ulcer base, all cases completely relieved.

(e) Resection of ulcer—One case died on table from heart failure, others completely relieved.

(f) Duodeno-jejunal anastomosis—Two cases completely relieved.

(g) Duodenostomy—One case to give rest to stomach and for duodenal feeding.

(h) Other operations combined or separate, such as appendectomy, cholecystectomy. Cases usually relieved.

It is rather definitely clear from the above remarks under operative procedures that the best results have been obtained where the ulcer has been resected and proper drainage of stomach established, when necessary, after resection of the ulcer.

Over a third of a century has elapsed since the foundation of gastric operations were laid, and, curiously enough, hardly a single revolutionary method has been developed.

Technical modifications have been brought forward, but the partial gastrectomy of Billroth; enlarging the pyloric orifice of Heineke-Mikulicz and Kocher; and gastro-intestinal anastomosis of Woelfer, von Haberer and Roux remain the basal procedures.

While until recently most surgeons have advised simple gastro-enterostomy in the treatment of ulcers of the stomach, the unsatisfactory results in a certain percentage of cases have created a

numbr of advocates of more radical procedure.

The advantage of gastro-enterostomy is that it will present easier drainage of the stomach, it will bring about some admixture of the alkaline intestinal contents with the acid stomach contents and will give rest to the ulcer. It is likely that gastro-enterostomy has only a mechanical action. It is strange that no enduring physiological basis for treatment of stomach ulcer by gastro-enterostomy has been developed.

Gastro-enterostomy may be combined with excision of the ulcer or with Balfour's destruction of the ulcer by cautery. Balfour's operation destroys the ulcer completely and because of the selective action of heat upon the cancer cells, destroys any early malignant degeneration at the margin of the ulcer. This operation is extensively used. It is likely best used for ulcers of small size high up on the lesser curvature associated with pyloric spasm and gastric retention. The removal of these ulcers by gastrectomy would sacrifice the whole stomach. The method of gastroenterostomy in Y combined with jejunostomy is valuable in cases of extended indurated inaccessible ulcers, grown to the diaphragm or liver or pancreas. The operation of jejunostomy gives rest to the stomach and a chance for the ulcer to heal. Radiology shows that the ulcer has a tedious and protracted healing.

In chronic ulcer with sclerosis and low-acid values without obstruction, excision and suture or cauterization is more useful than gastro-enterostomy; also when these operations unduly distort the stomach, resection is still more preferable. Moynihan finds few cases in which gastrectomy cannot be performed with satisfaction. In ten years his mortality has been 1.6 per cent, a little lower than the lowest published death rate from Balfour's operation. He has introduced the "anterior no-loop" method. The jejunum is brought from its flexure across the transverse colon from left to right and applied to the divided stomach so that the proximal part of the jejunum joins with the greater curvature. My preference of gastrectomy

ies would be first for the type of Billroth I, where the pylorus or duodenum is anastomosed directly to the stomach and secondly for the Mayo modification of Billroth II, where the proximal end of the duodenum is closed and the proximal first loop of the jejunum brought through the transverse meso-colon is applied to the still unclosed end of the stomach. The fatal angle of Billroth I operation has disappeared with better methods of suture and this operation as stated, is to be preferred to the Polya or Billroth II when practicable. Moynihan feels that gastrectomy should be used except when the condition of the patient prohibits any major operation, or when the location of the ulcer makes this operation impracticable.

He states that gastrectomy is a treatment of chronic or duodenal ulcers that with the least risk makes all symptoms subside, prevents a recurrence of the disease and any disorder associated with the operation.

X-RAY DIAGNOSIS OF GASTRIC AND DUODENAL ULCER.

C. C. Phillips, M.D., and R. H. Lafferty, M.D.,
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It has been only a few years since X-rays were first used in the diagnosis of gastric and duodenal ulcer. Credit is due Hammeter for the first effort in this field. Although his method proved of little direct value, it served to stimulate others to improve his ideas, until at the present time, by much care and thoroughness in technic more than 90 per cent of ulcers, both of the stomach and the duodenal cap, can be correctly diagnosed. It was Reiche who first succeeded in positively demonstrating an ulcer cavity on screen and plate.

Our usual procedure is to give the patient twelve ounces of a mixture of barium sulphate, malted milk, and water and to make a careful study of the stomach and duodenum by both fluoroscope and plates. The size, position, contour, mobility, shape, and motility

must be observed, as abnormality in any of these may be a link in the chain leading to correct diagnosis.

Four types of ulcer must be considered:

First: The ulcer may be only a small erosion of the mucous membrane, which is not deep enough within itself to cause any defect in contour, and in these cases we must depend on indirect evidence upon which to base our conclusions.

Second: The ulcer may have progressed until it shows as a definite protrusion from the contour of the wall, in which case we also have our secondary manifestations. This type is known as the niche or penetrating ulcer.

Third: The ulcer may have progressed still further and perforated the wall, and extended into an adjacent structure, in which case an accessory pocket is demonstrated, the indirect signs being present in these cases also. This type is known as the perforating ulcer.

Fourth: Many observers describe a carcinomatous ulcer, but there has been much discussion as to whether these are primarily carcinoma or carcinomatous degeneration of chronic ulcer.

We have two direct signs of gastric ulcer, viz: the niche and the accessory pocket, either of which when positively demonstrated, even with no other signs present, is diagnostic. Either of these signs, if present on a curvature can readily be demonstrated in the antero-posterior view, and can often, if situated on anterior or posterior wall of the perpendicular portion of the stomach, be demonstrated in a lateral or oblique view. If situated on the anterior or posterior wall of the pars pylorica, it is in almost every case impossible to demonstrate the niche or the accessory pocket, and it is necessary that at least some of the indirect signs be present or the lesion will escape detection.

The indirect signs are: spastic manifestations, including spasmodic hour-glass stomach, incisura, and diffuse gastrospasm; organic hour-glass stomach; retention of part of the test meal for more than six hours; abnormalities of peristalsis; alteration in mobility; and

localized tenderness. These signs, when appearing in certain definite groups are positively diagnostic, but no one of them alone is sufficient evidence on which to base a diagnosis. The chief and most constant of these signs is spasm, which occurs most often in the form of an incisura if ulcer is present. Any of the different types of spasm may be caused either by ulcer, or by pathology in other abdominal organs. Spasm which is caused by extrinsic conditions will entirely relax if belladonna in some form is administered to physiological effect. A diagnosis of ulcer should never be made from indirect sign groups alone in which spasm takes a prominent place until re-examination while the patient is thoroughly under the influence of belladonna. We experience better results if the belladonna is given over a period of a few days instead of being given in a few large doses on the same day. An incisura with a pressure tender point opposite it, observed along with six hour retention, is in almost every instance diagnostic, though the tender point must be narrowly circumscribed, as a large percentage of patients who do not have ulcer have some tenderness in the epigastrium. This group of signs may be observed when the incisura is caused by an adhesion band, but if there is a tender point present in this condition, it is as a rule not very sharply localized. The same group may be caused by pathology in organs adjacent to the stomach, in which case the spasm would be relaxed by the use of belladonna. An incisura is often caused by scar tissue from a healed ulcer and when found is a frequent cause of error in diagnosis.

Organic hour-glass stomach produced by ulcer, in most cases gives the stomach the shape of the capital letter "B," while that of cancer, as a rule, gives it the shape of the capital letter "X" and the canal of the hour-glass in the latter condition is, in almost every instance, longer. In both these conditions the contour is the same at each observation, while in the spasmodic type the contour will be seen to change during screen examination, though in some instances the change may be very slight.

The six hour residue occurs in approximately fifty per cent of cases, and though not alone diagnostic, when present is evidence enough to arouse suspicion. The residue may be observed with the ulcer in any location, and is no doubt due, in most cases, to reflex spasm of the pyloric sphincter, as only a few ulcers involve the pyloric orifice.

In almost all early cases there is hyperperistalsis, and the waves never pass smoothly over the affected area. In cases of long standing the stomach may have become hypotonic and dilated, and in many instances the peristaltic waves can scarcely be seen. In these cases there is almost invariably six hour retention.

Limitation of mobility is not infrequently observed to be caused by adhesions resulting from ulcer, this most often being observed in cases of perforating ulcer.

Several years elapsed after X-rays were proven of value in the diagnosis of gastric ulcer before they were used to any definite advantage in diagnosing duodenal ulcer; also at this time the method is as accurate in this as in gastric ulcer.

In the duodenum, as in the stomach, we may have the small erosion of the mucous membrane, the niche type or penetrating ulcer, the perforating ulcer, and rarely the so-called carcinomatous ulcer. As in gastric ulcer, positive demonstration of the niche, or the accessory pocket is diagnostic. By far the most frequent type of duodenal ulcer is found as a small erosion of the mucous membrane, not deep enough to hold a sufficient quantity of barium to cast a shadow projecting from the wall of the intestine. It is in these cases that our conclusions must be based on persistent irregularity in contour, which is very largely due to spasm, to pylorospasm which is present in almost every case, and to hyperperistalsis and rapid emptying of the stomach which are, as a rule, also present. In a small percentage of these small ulcers the spasm will be relaxed by belladonna but the hyperperistalsis and rapid emptying of the stomach will persist. A pressure tender point is of some value here but not of as

much value as in diagnosing ulcer of the stomach, because the tenderness may be due to a diseased gall bladder. Quite frequently duodenal ulcers are large enough or cause spasm enough to delay the emptying of the stomach, and in case of marked hyperperistalsis and delay in motility of the stomach with positively no defect in the gastric contour a lesion in the duodenum should be strongly suspected even though the contour of the cap is apparently normal. In cases of long duration causing obstruction the stomach may become hypotonic and dilated. By far the larger percent age of duodenal ulcers occur in the bulb, and those occurring in other portions, as a rule, cannot be positively diagnosed by X-ray. The writers have never been able to positively diagnose one outside of the cap, though frequently we find evidence which leads us to suspect the condition. A positive diagnosis of duodenal ulcer should never be made until the patient has been examined while under the influence of belladonna. Adhesion of the bulb to some other structure often causes irregularity of contour and is sometimes a source of error, in diagnosis, but this error can as a rule be avoided by observing alteration in mobility. In a small percentage of cases both gastric ulcer and duodenal ulcer are observed in the same patient.

Conclusions.*

First: Although we do not wish it understood that we discount the value of other methods of arriving at a diagnosis, we do feel that the X-ray is the most reliable single method and the only one by which the ulcer can be definitely localized.

Second: The accuracy of this method depends directly upon the thoroughness and efficiency of the radiologist, since the fluoroscopic study made by the experienced radiologist is the most valuable part of the examination.

Third: If the first examination indicates an ulcer, a second examination made while the patient is under the influence of belladonna will add greatly to the percentage of correct diagnoses.

THE SUB-LETHAL OR STIMULATING DOSE OF RADIUM.*

By Will D. James, M.D., The Hamlet Hospital,
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The problem of dosage in the application of radium therapy is one which has proved most perplexing. At times one will read in the literature of a specific lethal dose for a lesion of this nature, while another type of lesion requires a different dosage to produce lethal effects on the neoplasm. Empiric statements such as these are likely to be misleading, in that the factor of dosage in the specified number of milligram-hours of radium exposure is the keystone to the procedure, and, following this set "rule of thumb" the physician should expect brilliant results.

Such, however, does not always obtain, as some of the results of the early operators with radium bear mute evidence.

Quite a few factors must be taken into consideration in laying out the plan of treatment. Naturally, the patient is deserving of paramount attention, meaning by this that a careful physical examination, to determine the individual's physical status, should precede the attention to the pathological lesion itself. Were one to disregard this rule and, in so doing, cure the condition at the expense of disastrous results to the patient, the state of affairs would naturally fall into the class of that formal newspaper witticism of "the operation was successful but the patient died." Treatment should be made on rational lines which are evolved from a consideration of physiological and pathological processes. If a very long exposure is contemplated, then all steps should be taken to insure that the patient is in a fit condition to stand the strain. A careful consideration of the pathologic processes at work, the condition of the

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neoplasm, the type of cell composing the bulk of its structure, and also that of the surrounding tissues, will in a number of cases rule out at once any hope of cure. The treatment then must become palliative, and in this group there is a large field for the radium therapist.

In former years it was thought that radium had a specific action upon cancer cells rendering them innocuous, and allowing the tissues to heal over the area. Recent work at the Rockefeller Institute has demonstrated that this is not true. What really happens is that radium produces stimulation of the adjacent tissues and lymphatics, inducing a mononuclear lymphocytosis about the area radiated. A fibrosis is thus produced about the cancer cells and they are rendered innocuous. From this theory one might deduct that all that was necessary in radium therapy was to administer repeated small dosages until the tissues had responded satisfactorily and the cancer cured. Unfortunately this does not always happen, and the beginner in radium therapy will occasionally be surprised to see a cancer suddenly becoming more extensive after it has been responding to treatment favorably.

The primary action of radium is that of stimulation to cell activity and tissue growth. Several tables estimating a lethal dose for each form of tumor have been made up. Seitz and Wintz, in their work on "Treatment of Cancer and other Tumors," propounded such a table, and they further stated that a dose short of the lethal dose, say fifty per cent of the estimated lethal dose, is a dose which will stimulate the neoplasm to renewed activity and growth. When a tumor is actively growing, it must be a difficult matter to say when it is actually stimulated by radiations. What appears to be a stimulated effect may after all be only an acceleration or growth independent of any extraneous stimulations.

We recall the laboratory experiments in our studies in Physiology when the dissected gastrocnemius muscle of the frog was subjected to electrical stimuli. It responded vigorously for a time; this was followed by a period of fatigue.

Continued stimulations resulted in exhaustion and death, the cause of death being due to "a summation of stimuli." Is it not reasonable to suppose that by the use of frequent small dosages of radiations the law of summation of stimuli comes into force? The cells are overstimulated, and either die or become more vulnerable to the natural process of repair in the tissues and are overcome.

It was from such observations that the highpowered, high-voltage Coolidge X-ray tube has been developed, to deliver the maximum radiation to the patient in the shortest time, rather than a prolongation of the exposure time of repeated sittings to produce the lethal dose. This maximum dosage, accomplished nowadays by the use of the highpowered water-cooled Coolidge tube tends to reduce irradiation sickness to a minimum. The lethal dose is that dose which stimulates the tissues to activity which will destroy the cancer cells by fibrosis. The sub-lethal dose might be described as that amount of radiations, from repeated small dosage at frequent intervals, which lowers the vitality of the tissues and stimulates the growth, resulting in further cancerous invasion.

Therefore, the successful treatment of malignancies resolves itself into the application of sufficient dosage at the initial treatment, to be repeated after a considerable interval, if necessary. In the first years of our experience in radium therapy we have seen numerous cases of malignant conditions, which we were treating with fractional doses, improve very satisfactorily over a period of several months, and then be equally surprised to see that a retrogressive change was taking place and that the final cure, which we had hoped for and expected, was not being consummated. Instead an indolent ulcerative condition would appear, which has proved most stubborn to treatment. We infer from this experience that the tissues have been devitalized to such an extent that constructive reparation could not take place. Therefore, it has been our custom to resort to initial large dosages in the treatment of these conditions.

In the treatment of a cancerous condition, it is of vital importance that the radium be applied to all areas in and about the growth, and of these the base is of not the least importance. Thorough radiation of the base and adjacent tissues can be accomplished by mass removal of the growth by electro-coagulation, and then the radium applied. In some instances, for example, carcinoma of the cervix with extensive involvement of the vaginal fornices, or extensive involvement of the cervical tissues over-lying the great vessels, in which cases electro-coagulation cannot be resorted to, the use of radium needles or radium emanation seeds is resorted thereto. The method of implantation of the radium seeds into the growth is preferable, because they eliminate radiations over a period of approximately thirty days, during which the patient can be at home, which is quite an economic factor from the patient's standpoint, in that it is not necessary for him to be hospitalized during this time.

To summarize, we might say:

1. The radium therapist should be equipped with a sufficient quantity of radium to be able to deliver maximum dosages at the beginning of the treatment, rather than to depend upon a summation of dosage over a prolonged time.

2. Repeated small dosages of radiations often result in an over-stimulation and exhaustion of the tissues, lowering their vitality and rendering them favorable for further cancerous invasion.

3. Thorough radiations of all the tissues in and about the growth is an important measure and can be accomplished best by destruction of the mass of growth by electro-coagulation with subsequent radiation, or the implantation of radium needles or radium emanation seeds, preferably the latter, because of their prolonged action.

GYNECOLOGICAL DIAGNOSES— OUR OBLIGATION AND RESPONSIBILITY.*

By Gilbert F. Douglas, M.D., Birmingham, Ala.

In this discussion I am placing those of us who are specializing in gynecology on the same basis as those who are doing general surgery, general practice or in any way dealing with gynecological problems.

First, in making a gynecological diagnosis we should feel that we are dealing with a female, human, and an individual who has some trouble that has to be elicited, instead of looking at the patient as a secondary consideration with the trouble of which she complains as the primary and only thing to consider as we go into the case. What I mean here is that in making a gynecological diagnosis we have to think of the many differential points that we would in working for a diagnosis from any viewpoint. Without this point in view we shall surely make a great many more incorrect diagnoses than we would otherwise and be humiliated when, if we had only used the diagnostic ability that we have, the diagnosis would have been different; for many of our mistakes are due to omissions rather than to commissions.

For a moment, let us study the old time-honored complaint, leucorrhea. I don't know of any one thing in gynecology about which the general practitioner as well as gynecologist is consulted more than this one thing. It is of such universal presence that I feel we are justified in doing an about face and really studying the pathology, rather than satisfying ourselves with the symptoms as given by the patient, then attempt a sane treatment without even an examination.

To consider the infections such as Neisserian, streptococcic, staphylococcic, etc., which attack the compound racemose glands of the cervix, and the constitutional diseases, such as anemia, constipation, tuberculosis, carcinoma,

etc., will give us an idea of the magnitude of this subject.

Looking first to the train of symptoms which follow the infections of the cervix causing leucorrhea as one of its symptoms, we are reminded that our task is not half done in prescribing a douche for a patient with leucorrhea without an examination to determine if possible the type of infection, whether it be Neisserian, streptococcic, staphylococcic or beginning carcinoma. With this point cleared, our plan of treatment is often altered or changed entirely. Since we have developed to where practically all of us are of one opinion that very few of the leucorrrheas are due to endometritis or inflammation of the endometrium of the body of the uterus, we agree that curettage is not the rational line of treatment in these cases, but that the infection is as a rule of the compound racemose or cervical glands. Realizing the infection is not by surface extension from the vagina into the cervical canal, from the canal up into the uterus, following only on the surface with one exception (gonorrheal infection acting in this manner), we can now hope to approach this problem from a scientific viewpoint and treat it in a rational way.

Sturmdorf pointed out the fact that infections of the cervical glands are carried by lymphatic channels into the broad ligaments, to the musculature of the uterus, tubes and ovaries. On this premise a patient may suffer a chronic toxæmia as she would from infection and pus about the teeth and within the tonsils.

If we are agreed that this is correct what shall be our method of treatment? This paper is not written for the purpose of giving treatments, but suffice it to say that if we have a definite focus of infection it is only rational to remove it.

Again, if possible for us to have manifested the symptoms of leucorrhea in the beginning stages of carcinoma, are we justified in giving a prescription for a douche to a patient with a leucorrhea which has been present for quite a while without a thorough examination

to ascertain the real pathology? I don't feel that we should, any more than you would give a patient with a possible pneumonia a cough syrup without an examination.

Other symptoms of which patients complain, which often are of quite an annoyance, are the menorrhagias and metrorrhagias. These symptoms often try our skill and patience before we are able to arrive at a correct diagnosis since there are so many things that may cause them. Many cases are due to infections of the cervix following lacerations at childbirth, this infection extending through the blood and lymphatic channels up into the musculature of the uterus, tubes and ovaries, causing a disturbance of the circulation and internal secretion of these tissues. We have the uterine misplacements not only of the multiparous but of the primiparous women causing congestion of the organs and later a disturbance of the normal menstrual flow.

There are constitutional conditions that may cause this disturbance such as syphilis, which will never be suspected or diagnosed as such, without proper examination. Beginning carcinoma, ovarian cyst or uterine fibroids, may be contributing factors. Inflammation of the tubes or ovaries and general pelvic infection are responsible in many instances.

"Falling of the womb" is an expression we all have heard used by the laity many times. The patient has the sensation of heaviness when on her feet and says that the uterus is extruding. This may be true, but many times the protrusion is in reality a cystocele. This condition probably is due to a lacerated perineum primarily, followed by a retroversion of the uterus and next the cystocele. Without a proper diagnosis and plastic operation-perineorrhaphy, etc., our patient will continue through life with this same complaint.

Another common complaint in connection with the prolapsus uteri is "kidney trouble." My experience is that most of those who seek examination with this complaint have cystitis rather than a nephritis. Just a word about

the treatment of this condition. There are very few cases of real cystitis that get well under six or eight weeks with bladder irrigation, rest in bed and other appropriate treatment, so for us to give the patient a prescription without further treatment and tell her to come again, if she has symptoms, is almost useless.

A problem that is brought to us quite often is that of sterility in women. There are many things to puzzle us in the practice of gynecology and this is one that is more than usually perplexing, there being so many things to consider as possible causes of this condition. We have the infections of the cervix, the conditions of endometrium to keep in mind, the fertility of the ovaries, regularity of menstruation, compatibility of husband and wife, pelvic infections, nonpatency of tubes. None of these are we able to say positively to be the cause only by making our diagnosis by process of elimination. So much has been written and said about the patency of the fallopian tubes during the past few years, I am going to take time to elucidate this just a minute. The Rubin test for determining patency of the tubes was used quite a good deal; but, as you know, this required quite a bit of paraphernalia (gas tanks, instrument for determining amount of pressure of gas that is within the uterus, etc.) All of this being quite expensive and the practical value of this test for making this diagnosis not being without question, the apparatus has not met with general use. Having a method of making this test with the same practical advantage as Rubin's test (that which is being used by Dr. A. E. Kanter of Chicago), I do feel that it is worth trying in every case where the question of patency of the tubes is to be dealt with. All that is required to make this test is a rubber ear and ulcer syringe (one ounce), glass tip to fit cervical canal, tenaculum forcep, vaginal speculum, and a retractor. The technic is as follows: place speculum in vagina, grasp cervix with tenaculum forcep, paint cervix with iodine. With the glass tip so fitted into the syringe that no air may

escape about the connection, with the cervix held, pass glass tip into the external os, press up firmly so no air can escape around glass tip which is in the cervical canal, press the air which is in the syringe into the cavity of the uterus. If the tubes or either of them are patent the air will pass through and you can expell all of the air from the syringe. If the tubes are closed you cannot empty the syringe. The pressure possible to obtain with the hand syringe is 270 mm. If the tubes are open you can hear the air passing through them by placing a stethoscope on abdomen over the tubes and uterus. If air passes through, the patient will complain of pain about tubes and soon will say she has pain in upper abdomen in region of the liver. This usually is referred to the right shoulder. Pain will last for a while but gradually passes off. There is no danger in its use.

This method is simple. The equipment is not so much but what any one might keep all present in his instrument case, if he chooses to use this method. The practical value is quite a good deal, for before operating on these cases for sterility, endeavoring to do some plastic work on the tubes, I feel that the patient is certainly entitled to this diagnostic procedure. Without this, or some other method, we will not know whether the fallopian tubes are open or not.

In gynecological diagnosis we are often besieged by our patient for the cause of backache. As all know there are many things that may cause this symptom. It may be due to muscular conditions, to sacro-iliac joint trouble, chronic constipation, retroversion, chronic pelvic infection, enlarged uteri, infections of the crevix, uterus, tubes, ovaries, stricture of ureter, stone in ureter, to fatigue, trouble with the feet, and many other things. For us to prescribe a belladonna plaster and do no more will mean that we will really diagnose very few of these conditions correctly. Many are obscure and extremely difficult to locate at best and for us to pass these symptoms over lightly will often be the cause for these good patients to leave us and seek the chiropractor or other

quacks or charlatans for relief. Later they will come back to tell us of what a wonderful doctor "Doctor So and So" is. Without due consideration in these cases they will become discouraged, and we will overlook a true diagnosis of their condition.

Another type of gynecological patient is the psychiatric or neurological. A great many of these cases have complaints referable to female organs and as we on casual examinations do not find sufficient trouble to account for the symptoms we immediately attribute all symptoms to the nervous or mental side and at once, reasoning with ourselves that we are not the ones to treat them fail to make a real diagnosis. Many of these patients having confidence in the doctor who has always looked after them become despondent and on advice of friends take Lydia Pinkham, use Orange Blossoms, or some other patent medicine, or seek the advertising quack. If he is shrewd enough to make an examination, he will probably instill confidence in the patient and she soon lauds him as if from on High.

As the title of this paper suggested an obligation to our patient, I will say just a word and that is to this effect. If we assume the title of gynecologist or if we do gynecological work, we are obligated to work just as hard for a correct gynecological diagnosis by standard routine examination; or, if we are not going to do all, have it done as would be done in any other specialty or in general practice for if we fail to do this we will leave undone many of the things that should be done and will fail in treatment as result of incorrect diagnoses.

Another obligation in gynecology which we owe to our patients, from a surgical standpoint, is to be just as honest to them as we would have them be unto us. I mean that we should, where possible, make a diagnosis instead of having the operative mania, removing tubes, ovaries, or uteri before really diagnosing. If the latter had been completed before we sought the probably more spectacular side—operation, more conservatism would often be used and

fewer ovaries, tubes and uteri sacrificed. Our patients would be far better off in the end. So much for the conservative side of this obligation. Now, there is the equally binding obligation for us to operate when such is necessary, after proper diagnosis has been made, rather than treat patients by palliative measures with no hopes of recovery in sight. To do so our patients are losing their golden opportunity for physical recovery, and mental happiness.

Now a few words as to responsibility. When we look at this problem squarely in the face with the full sense of consciousness that these patients are our mothers, our sisters, our wives and the finest of which God has given to earth; and with the knowledge that without these women our race becomes extinct; and without health they can only perform part of their duties here, just then do we appreciate our whole responsibility to them from a professional standpoint. This should stimulate us to do our utmost in diagnosing and treating that we might know our patients better. Then more real conservatism will be used. If we haven't time to work out a diagnosis, let us be frank enough to tell her so, without making only a guess and let her go, for to do so we do not help very materially and we do our profession as a whole, an injustice.

Until we all respect gynecology as a definite specialty and study the literature and keep up with the new things that are being advanced, we shall fail to get all out of it that is possible in our practice.

Conclusions.

1. In making gynecological diagnoses let us look on each patient as a human mechanism with all phases to be considered, rather than as a trouble associated with a thing.

2. When treating leucorrhea we should endeavor to locate the cause and treat rationally rather than give douches empirically. Infections causing these symptoms are, as a rule, located in the cervical glands. Curettage should be relegated to ancient history as a treatment for leucorrhea.

3. Menorrhagias and metorrhagias are sufficient significance to warrant an early examination, that we may see many malignancies in their early stages.

4. Cystitis requires proper diagnosis and careful treatment if we expect to benefit our patient very materially.

5. Causes of sterility in women should be looked for by process of elimination. To determine patency of the fallopian tubes the Kanter technic I believe to be quite satisfactory and the most practical that we have.

6. To make a proper gynecological diagnosis requires as careful examinations as for making any other diagnosis, with the gynecological aspect to be kept in the forefront; for us to fail will be the reason for our patients seeking the quacks and irregular practitioners.

7. Our obligation is to give honest whole-hearted effort to making gynecological diagnoses or refrain from treating these conditions.

8. The responsibility is far-reaching, as we are dealing with the mothers and sisters of the present and future generation.

9. For the greatest success in the practice of gynecology we must place the specialty in its true settings, and work and study accordingly.

*Read before the Alabama State Medical Association, at Montgomery, Ala., April 15, 1924.

CRITICAL TESTS OF BLOOD GROUP INHERITANCE.

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The question of the inheritance of the blood groups is being studied by investigators in all parts of the world, and the results indicate an accordance with the Mendelian laws of heredity. From this evolves the medico-legal application of the groups, as set forth and championed by Ottenberg (1921, 1922, 1923) and others. Although each separate investigation involves but small numbers, they have now reached a point

where their combined statistics make a significant presentation.

The recent controversy as to the possibility of a medico-legal application of the groups was based on some observations by Buchanan (1922, 1923) which apparently conflicted with the Mendelian laws. The Mendelian interpretation was based on the fact noted by all the earlier observers, and confirmed by nearly all the later ones, that the agglutinogens never appear in the offspring unless they are present in the blood of one of the parents. The agglutinins, however, may appear in the offspring when they are absent from the blood of both parents. According to the Mendelian interpretation, the genetic formulae for the four groups, on the Jansky classification, would be as in Table 1. That is, "a" equal the power to agglutinate "A", and "b" equal the power to agglutinate "B".

Table 1.

I	II	III	IV
aabb	AAbb	aaBB	AaBB
	AAbb	aaBb	AaBB
			AaBb
			AABB

Genetic formulae for the four groups.

If this is a correct interpretation certain laws will be followed in the heredity of the groups, and certain facts of their inheritance may be stated. These are as follows: (1) Unions of group I must always result in group I offspring. (2) Unions of I with II or II with II, must result in offspring of groups I or II. (3) Unions of I with III, or III with III, must always result in offspring of groups I or III. Other unions do not constitute critical tests, as they may result in offspring of any of the four groups.

Twelve investigators have so far recorded inheritance tests in blood groups. If, on examining the cases studied, the groups are found to behave according to these rules, the Mendelian interpretation of the inheritance of the groups may be held as the correct one. Table II gives all the exceptions to the Mendelian law which have been so far recorded, with the exception of unions of group I, which are reserved for Table III. A total of seven anomalous families are recorded by three investigators.

Table II.

Author	No. of families	Groups Conce'd	Exceptions
Buchanan 1923	2	IxII	1 in group IV
Weszecky 1920	1	IxII	1 in group III
	1	IxIII	2 in group II
Mino 1924	4	IxII	3 in group III 4 in group IV

Exceptions to the Mendelian rule, other than unions of group I.

The most striking of the critical tests outlined above is the case of unions of group I, where the offspring should never be anything but group I. Table III shows all the unions of group I which have been recorded.

Table III.

Author	Number Families	Children in group I	Children some other group
VonDungern and Hirschfeld 1910	11	25	
Learmonth 1920	9	18	1 in group II
Keynes 1922	2	4	
Tebbutt and McConnell 1922	5	17	
Ottenberg 1922	12	25	
Buchanan 1923	8	17	1 in group IV 2 in group III 1 in group II
Jervell, 1923	2	5	
Dyke & Budge '23	30	30	
Kirihara 1924	6	20	
Pluss 1924	12	27	
Mino 1924	12	31	5 in group II

Unions of group I as recorded by various investigators.

It will be seen that only three observers have recorded exceptions to this rule. Learmonth (1920) recorded one exception, and himself directed attention to the possibility of illegitimacy as an explanation. Mino (1924) recorded five exceptions, but does not consider them as proving anything, because of the possibility of mistakes in technique or illegitimacy, or other reasons. Four exceptions were by Buchanan, and on these four exceptions, and his two cases where union of groups I and II gave a child of group IV, he bases his objections to the medico-legal applications of the groups. From the standpoint of a geneticist, Buchanan's paper shows a lack of familiarity with the Mendelian interpretation given to the groups. The samples of blood used were admittedly received by mail from families unknown to the author. All in all Buchanan's objections do not present a very formidable aspect, and his exceptions must be attributed to mistakes in technique or observation.

Keynes (1922) points out three possibilities, where parents of group I have

a child of some other group. They are: (1) The observations are at fault; (2) the putative father is not the real father; (3) the Mendelian theory of inheritance is wrong. To these, as I have already pointed out (Snyder, 1924) must now be added a fourth: the possibility of more than four groups in human blood. This possibility evolves from the recent work of Guthrie, Huck Pessel, Tebbutt, Coca and Klein, and may some day explain some of these anomalous results. As yet, however, no evidence has been given that there are any additional hereditary group characters in human beings, and in the absence of these, the medico-legal application must stand. It is reproduced for convenience in Table IV.

Table IV.

Known in Group	Children	Parent to be in Group	Known must be in Gr'p.	Other Parent
I	I	I	I	II or IV
II	II	II	II	II or IV
III	III	III	III	III or IV
IV	IV	IV	IV	IV
I and II	I and II	I and II	I and II	III or IV
I and III	I and III	I and III	I and III	II or IV
I and IV	I and IV	I and IV	I and IV	II or IV
II and III	II and III	II and III	II and III	III or IV
II and IV	II and IV	II and IV	II and IV	III or IV
III and IV	III and IV	III and IV	III and IV	III or IV
III and IV	III and IV	III and IV	III and IV	III or IV
III and IV	III and IV	III and IV	III and IV	III or IV

Prediction of remaining parent groups (after Ottenberg.)

The number of families studied in the inheritance of blood groups is now more than six hundred, comprising several thousand individuals. Of these, only thirteen families present anomalies: a percentage well within the range of errors in technique, or of illegitimacy.

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than has strain or a mechanical defect in the heart itself, at all stages of the disease, in its initiation, in its development, and in its progress to immediate circulatory embarrassment and death, then and only then is the natural history of heart disease understood." To the minds of most of us perhaps this statement suggests a comparatively small group of infections whose tendency to attack the heart has been well emphasized and is generally recognized. Chief among these are the rheumatic fever group, pneumonia and diphtheria. During these diseases one is constantly alert to the likelihood of cardiac involvement and is often inclined to assume its presence though definite signs thereof may be absent. Every possible measure is employed that may serve to protect the cardiac mechanism in order that its function may be preserved, and that the extent of the disease may be in some degree limited. No doubt much is accomplished in this way both in enabling the heart to withstand the attack of acute invasion and also in determining the amount of damaged cardiac tissue left after the acute stage has subsided.

In the study of chronic cardiac patients, however, one frequently encounters indisputable evidence of past infection in the heart, but careful questioning fails to reveal a history of any attack in which the damage probably was done. The end result in this group may be identical with that in which a clear history of rheumatic fever is obtained. It would seem then that, occasionally at least, extensive inflammatory changes may occur in the heart without having produced noteworthy illness. It is also possible that more careful observation of the cardiac mechanism during slight infections might yield information that we do not now possess concerning the etiology and initial phases of many cases of organic disease.

In considering the heart in acute infections it is necessary to remember that several factors of greater or less importance may produce cardiac disturbance. Fever as a rule causes increased rate. Toxins peculiar to certain organisms affect the heart very much as chemical poisons do, their in-

HEART BLOCK IN MILD INFECTIONS.*

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Concerning the influence of infections on the heart Lewis' writes as follows: "When it is thoroughly grasped that infection has more to do with heart failure

*Read before the Richmond Academy of Medicine, Sept. 23, 1924, Richmond, Va.

fluence being usually temporary. Infection may become active in the cardiac structures themselves, causing damage to the tissue that may be permanent. And finally, it must be borne in mind that following any infection there may occur one or more of the manifestations of that elusive circulatory disturbance known as "effort syndrome" or neurocirculatory asthenia, a condition that always suggests heart disease but in which the pathology is rarely if ever cardiac.

To attempt to distinguish between these effects is the duty of the physician if he hopes to institute proper management and apply treatment with a greater chance of good than harm. Such distinction is manifestly difficult and the milder the infection the less likely is the opportunity to be afforded for thorough study. At present there is a regrettable tendency to disregard slight manifestations on the part of the heart, and, when they become more troublesome, to give Digitalis without regard to the nature of the disturbance and without special consideration of whether the drug is or is not indicated.

The symptoms that arise during acute infections and are suggestive of cardiac disturbance furnish but little evidence of what is actually going on in the heart. White² states as his belief that there is "no pathognomonic symptom of cardiac involvement in infectious disease." Tachycardia, palpitation, dyspnea, and precordial pains attract attention to the heart but perhaps in the majority of instances they speak for a disturbance of the effort syndrome variety, while structural cardiac involvement may occur without any one of them.

Physical signs commonly associated with disease in the endocardium or pericardium are familiar to everyone and need not be dwelt upon here. They are of importance only insofar as they indicate an inflammatory process affecting one or more of the cardiac structures and threatening, or perhaps already involving, the myocardium. It must not be forgotten that the heart muscle with its varied specialized

qualities is the vital part of the organ, and attention need not be lavished on the valves and coverings. Signs of early myocardial damage are not so easily discovered. As in the brain, there are large silent areas in the heart muscle where extensive disease may exist and give little or no clinical evidence of its presence. There are also sensitive tracts which when even slightly affected by disease display, by perverted function conspicuous signs of their injuries. The auriculo-ventricular bundle or bundle of His is one of these.

Sir James MacKenzie³ looks upon disorders of the bundle in acute conditions as the most characteristic evidence of damage done the heart muscle. Sir Thomas Lewis⁴ considers partial block as being often the only demonstrable sign of myocardial invasion and thinks that it occurs much more frequently than is generally recognized. Numerous cases of bundle involvement have been observed during rheumatic fever and diphtheria while a considerable number occurring during the milder infections have been recorded. Hamburger⁵ in an analysis of 16 cases of cardiac disturbances following respiratory infections, chiefly those classed as influenza, found partial auricular-ventricular block in five cases. Two of these patients when examined later showed no evidence of block. He concludes that partial block occurring at the height of an acute respiratory infection may be interpreted as structural heart involvement even though it is transient in character. He calls attention further to the peculiar tendency of streptococcus infections to involve the auricle and conduction pathways.

Affections of the auriculo-ventricular bundle may cause varying degrees of block. There may be only a delay in transmission; or certain impulses may fail to reach the ventricle; or complete stoppage of all impulse coming from the auricle may occur. None of these conditions is easy to recognize clinically, but the milder the degree of block the more difficult is its detection. Simple delay in transmission can only be recognized from graphic records as it produces no pulse irregularities and no

characteristic rate. Partial block may frequently be suspected from the appearance of dropped beats coming at the height of an infection or from full Digitalis dosage but where graphic examination is possible it is a much more certain means of recognition. The important thing, however, is to keep in mind always the possibility of bundle involvement in infections and to make every reasonable effort to detect it for it is often the only available evidence of myocardial invasion.

I wish to present two cases in which there was definite involvement of the bundle of His during the following comparatively mild infections. The symptoms referable to the heart were in neither case suggestive of actual cardiac involvement and the physical signs were inconclusive.

Case 1: A physician aged 38 consulted me about his heart in May 1924. About a month previously he had had an acute arthritis, presumably secondary to a

diseased tooth, and during this attack developed tachycardia and palpitation. After having remained in bed a week and with a regular pulse of 120 per minute, Digifoline tablets of one and one-half grains each were begun. When four tablets had been taken at six-hour intervals the pulse suddenly fell to 40 and became irregular. The drug was promptly discontinued and a few hours later the heart resumed its rapid rate with regular rhythm.

General examination was negative. Pulse was regular, rate 90. Blood pressure 112/68. The heart was not enlarged to percussion or by orthodiagram. A soft apical systolic murmur, which had been discovered several years ago, was heard and there was accentuation of the pulmonic second sound. Vital capacity: 3.6 liters. Electrocardiogram showed normal QRS complexes throughout with a conduction time of .28 second.

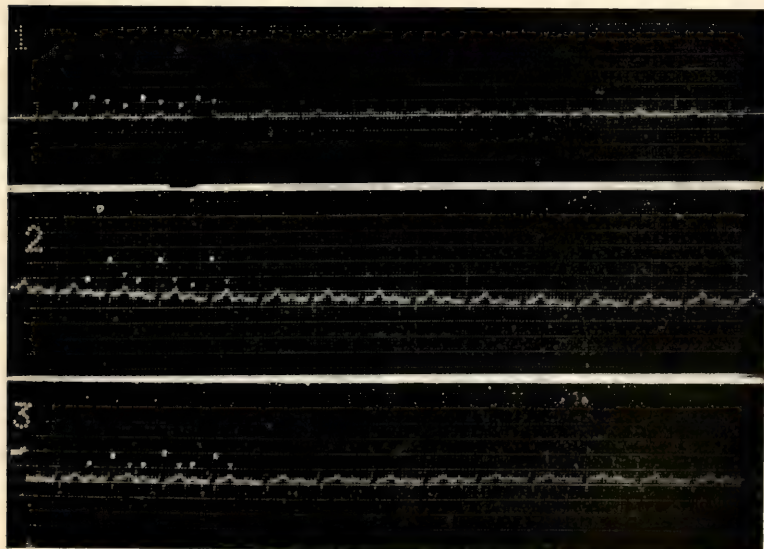


Fig. 1.—Case 1. Prolongation of P-R interval.

Case 2: A physician aged 40 developed an irregular pulse following an acute pharyngitis and sinusitis. There had been no previous infections except tonsillitis in early life for which a clean tonsillectomy was done in 1913. He had been examined on several occasions without the detection of any cardiac defect, nor had he ever before had an irregular pulse. In March 1924 he had a sore, red throat showing a hemolytic streptococcus on culture. This was accompanied by considerable enlargement of the cervical glands and moderate fever lasting about three days. Ten days after this attack subsided slight fever returned and investigation showed an acute infection of the left maxillary antrum which was opened and treated by irrigation. During this treatment he happened to feel his pulse and found it irregular. Examination of the heart showed no enlargement and no murmurs. There was a very distinct coupling of the beats giving the impression of dropping every third beat. The elec-

trocardiogram showed a 3 to 1 block with ventricular escape and prolonged conduction time after each second auricular beat. After the discovery of this condition the patient was put to bed and some five days later the rhythm returned to normal. A record made a month later showed no disturbance of conduction.

Of especial importance do the varying degrees of block become in their relation to the administration of Digitalis. This subject has been fully emphasized by McCulloch⁶ and again by Hamburger⁷. As Digitalis acts chiefly by depressing conduction in the junctional tissues, it is certainly contraindicated when such depression has already been brought about to a marked degree by infection. How much damage could be done by Digitalis in a heart with impaired auriculo-ventricular conduction would depend of course upon the extent of the lesion and the boldness with which the drug is given. Clarke⁸ in reporting a series of cases subjected to in-

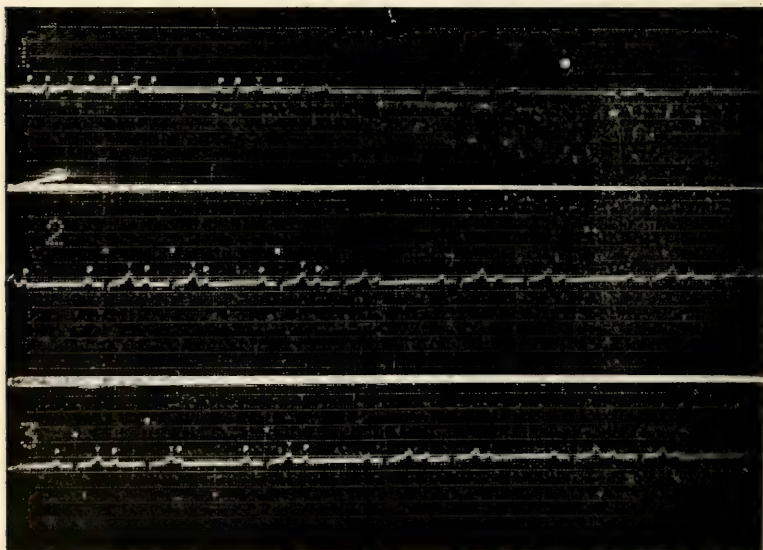


Fig. 2.—Case 2. Ventricle responds normally to every third auricular contraction.

tensive Digitalis therapy by the intravenous method mentions two in which sudden death occurred possibly as the result of the drug. In both, marked evidence of bundle disturbance appeared a few hours before death.

That impairment of conduction does occur in infections even of the milder variety is a fact worthy of most careful consideration. From the evidence available it seems probable that this disturbance usually means structural change in the heart though this change is not necessarily permanent. As partial block may be the only tangible evidence of myocardial invasion during an infection it should always be kept in mind and, when recognized, be looked upon as a reliable guide in treatment.

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Carbon Monoxide Poisoning in Small Garages.

The newspapers recently carried a news item of the death from carbon monoxide poisoning, of a prominent Baltimore man, who was found dead in his garage with the engine of his automobile still running. With the onset of colder weather such accidents will probably increase in frequency, says the Surgeon General of the United States Public Health Service, who warns automobile owners of the danger involved in running a gasoline engine in a small closed space for any considerable period of time.

In tests of the exhaust of a small 23 horsepower automobile engine it has been found that it discharged approximately 25 cubic feet of gas per minute, samples of which gave an average of 6 per cent carbon monoxide, or 1.5 cubic feet of deadly carbon monoxide gas per minute. Of course larger engines will give off more. Now a ratio of 15 parts carbon monoxide to 10,000 parts of air is considered a dangerous concentration to be exposed to for a considerable time; and the small 23 horsepower engine in "warming up" and giving off only one cubic foot of carbon monoxide per minute would contaminate the air of a small closed garage, 10 by 10 by 20 feet, to the danger point in about three minutes.

Carbon monoxide is a colorless, tasteless, and almost odorless gas. Its poisonous action depends on the fact that it has a much greater affinity for the hemoglobin of the blood than has oxygen—hemoglobin attracting carbon monoxide about 300 times as strongly as it does oxygen. By combining with carbon monoxide, the hemoglobin of the red blood corpuscles is prevented from giving up its oxygen to the tissues. Death results from paralysis of the respiratory apparatus.

The attack of carbon monoxide poisoning comes on insidiously, and consciousness is gradually lost. Even though the victim may become aware of the danger he is often unable to escape from it because of the great loss of motor power.

The automobile worker in a small garage is most frequently the victim. It therefore behooves every person who runs his engine in a small garage to see to it that the room is properly ventilated by having the windows and doors opened if he expects to run the engine for even a few minutes.

SOUTHERN MEDICINE AND SURGERY

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CHARLOTTE, N. C.

"A man who is good at making excuses is seldom good at any thing else." "A poor workman blames his tools."

"More Involved Than the Police."

Under the above title "The News Leader" Richmond, Va., carried an editorial in its issue of October 6, 1924, which is so sensible that we want to pass it on to our readers just as that Editor gave it to his readers.

"Far more than the Richmond police force is involved in the drug scandal. Whether the police are justly and wholly exonerated, or whether some of them will prove to be in collusion with a disreputable coterie from the underworld casts no light on and offers no solution to the problem raised by the fact that unless people want a drug there would be no drugs. Nobody peddles sand, and there is not much market for Jimson weed, and the reason is not because there is lack of salesmanship in either of these commodities, but because neither sand nor Jimson weed has been grasped by weak hands as a solace for a distressed and divided soul.

"The growth of the drug traffic is only another evidence that mankind is going to continue to try to find some way out of the labyrinth of fate. For the brave and resilient souls courage and hardihood have been enough. When the ruins of his nation fell about his head, General Lee took no refuge in any drug or stimulant, but he had a source of power that was as far removed from that of the average man as his genius is removed

from that of the average soldier; his courage and fortitude in the face of overwhelming adversity is a goal to which mankind can strive, but it is not the answer to the question of life with a vast majority of the world as it is today.

"To say this is not to approve or condone the use of drugs and alcohol; rather it is to point out that many drug-takers and many alcohol users are driven to their situation by an inherent weakness in their own mental or physical make-up that leaves them unable to bear

"The weary and the heavy weight
Of all this unintelligible world."

"The necessary adjustment to the stress and strain of life cannot be attained by legislation alone. It is a long and painful road. That mankind has made progress is evident; that mankind will continue to progress is debatable. Experience and common sense alike combine to emphasize the truth that these cravings for escape cannot be stamped out by making the methods of escape illegal. The problem lies far deeper; it is one of training in the home; of advice and instruction from wise and understanding minds, and, above all, it should never be forgotten that the problem is one that cannot be solved in a decade or a generation."

It seems that Richmond had been passing through one of those periodic outbreaks which come to every city and community, when public officials are accused, whether justly or unjustly, of collusion for personal gain, with law violators.

Laws do not make civilization. The "Ten Commandments" do not make Christians. Volstead did not make prohibition and the Harrison Narcotic Act will never rid the world of addiction. Civilization, Christianity, Prohibition and freedom from addiction are virtues of mankind born from within,—virtues of the heart and souls of men,—which legislators cannot force nor take

away. Man-made laws, though as finite as man himself, may be useful adjuncts, and are fitting and proper by way of encouragement but there is "More Involved than the Police."

In the process of making, when the world was yet young, there came a stage in evolution when it was expedient for a finite intelligence to work in co-operation with Nature and Nature's God. Man was the most perfect of all created beings, so God chose man and said "let us make man in our own image" giving to man the superior intelligence "and God breathed into man the breath of life and man became a living Soul." This was the final act preparing man for his privilege and his duty to "subdue the Earth and have dominion over it."

With every privilege there is a corresponding obligation. Evading the obligation is punishable by taking away the privilege. The story of creation goes on to say that all went well until man with his new found power tried to enjoy all his privileges and live a life of ease and luxury in a veritable Eden of Paradise without fulfilling his obligation and the purpose for which he was given this privilege and power, of co-operating with God in the development of the world. The inevitable happened then as it always happens. Man was cursed and his Eden destroyed. Man could not then and he cannot today live in an Eden of Paradise without paying the price.

Nevertheless, and struggling against terrific odds, the trend has ever been upward. "That mankind has made progress is evident;" but "that mankind will continue to make progress is debatable" is hardly in keeping with conditions as they are. "The survival of the fittest" is nature's most inexorable law; and only the fit can long survive. The world is making progress and always will.

Taking away from man his Eden of Paradise did not in the least degree modify his original obligation of doing his part in the general scheme of development. The individual duty today is just as imperative and the penalty of individual failure is just as great. If

then as individuals we wish to survive, if then we wish to again approximate an "Eden of Paradise" it must be at the price of doing our part to dispel ignorance, which in turn will dispel evil and chaos.

This duty cannot be delegated to policemen, neither can we plead compelling laws as an excuse. And this no doubt is the very heart of the whole situation. Individual finite men are as anxious as was father Adam to evade responsibility and so such men pass laws intended to compel people to be good, then after appointing policemen to enforce these laws they shift responsibility with a shrug of the shoulders and sit down to do as they please, purposely forgetting that there is "more involved than the police."

Eternal Vigilance the Price of Liberty.

In no field of human endeavor is this motto more true than in the matter of smallpox. In some community of the world there is almost constantly in progress an epidemic of smallpox. During recent years an investigation invariably discloses the fact that such epidemic came as a direct result of negligence immediately preceding the epidemic in the matter of vaccination.

During the latter days of 1923, in Detroit there commenced a notable increase of smallpox cases and up to June 30, 1924, 1,508 cases had been reported with 140 deaths. Fortunately it was finally possible in that city to arouse the public to a realization of the fact that an actual epidemic existed and **one half million** vaccinations were done. In Pittsburgh a severe outbreak began about the middle of June of this year and up to July 19, 55 cases and 11 deaths were reported. Then, and not until then, was the public aroused and a vigorous vaccination campaign instituted.

The menace of smallpox is not confined to any region or any season. Eternal vigilance is the price of its eradication. The responsibility rests on the medical profession. These are illustrations of the fact that when doctors, who are in constant touch with the people, fail to see to it that children and all non-

immunes are vaccinated, they are paving the way for an inevitable epidemic of smallpox. This is just one illustration of the negligence of the medical profession in giving to the people a service which the people demand, which has brought about dissatisfaction and a demand for the state's health activities.

The medical profession seems to have become so obsessed with the ideas of specialties and scientific progress that it has forgotten to care for the common people.

Doctor, the next home you enter please remember to ask the mother if every child and every member of the family have been recently and successfully vaccinated. If there is one who has not, then the guilt is yours if you fail to use every legitimate means at your command to secure such vaccination. The medical profession does not want innocent blood on its hands.

As Long as There is Life There is Hope.

"If I were a younger man I would undertake it." Yes, you have heard those very words and all too many of us have said them. Why? Osler's forty years age limit crashed on the ears of the world like a thunderbolt and like an electric shock brought many men to their feet in shameful realization of the fact that they were slipping into lethargy and careless inactivity.

Young men do things because they are imbued with boundless energy—the will to do and dare. Handicapped greatly by lack of wisdom born of experience yet in spite of this they achieve results. Youth has energy but cannot have experience. Maturity may have both energy and experience. Retaining energy and adding experience makes a combination that cannot be beaten.

In a list of 7,000 names of men who are recognized as having achieved distinction, 84 per cent are above 40 years of age. There are notable exceptions but in the main, the world's burdens are carried on mature shoulders,—shoulders of men whose retained energy was directed by the wisdom of years. Only when age gives up and hangs its head

in wilted abandon does it become dangerous to itself and those about it. "If I were a younger man I would undertake it,"—but—well—I'm getting lazy, that's all.

Years do not make age, but laziness does. Physical strength may wane but wisdom to conserve that strength and direct the economic expenditure of energy will compensate.

Just as a man who does not make acquaintances as he advances through life will soon find himself left alone, so the man who does not accept new ideas and weld them onto his experience will soon find himself alone and his day of usefulness over.

New Orleans Southern Medical Association.

Thanksgiving this year holds in store for the medical men of the southland a treat which may well surpass the festive occasion of song and legend and which will set a new high standard for days to come.

In New Orleans, "the City of Hospitality" from November 24 to November 27 will be assembled the membership of the Southern Medical Association and mingling with them will be distinguished guests from everywhere.

There will be scientific work graduated to suit the most fastidious mind, there will be clinical teaching with opportunity to use all the wonderful wealth of clinical material for which that city is so justly famous and with all of this there will be **entertainment**. In New Orleans there are no sub-standards—everything will be the very best of its class but there will be classes to suit every purse and every ambition.

You may take the wife along, and parenthetically it certainly would be very wise to do that, but leave everything else at home. When you board the train throw responsibility to the winds and say "Now, girlie this is one week when we are going to have a time."

The uninterrupted grind of your daily worry has made you feel cross and grouchy and perhaps the uninterrupted

responsibility for the "kiddies" has also gotten on "her" nerves. A week in New Orleans, with Thanksgiving turkey as only New Orleans chefs can cook it, will reopen for both of you visions of sunshine that may have been almost forgotten. You will act and speak differently to your patients and the kiddies when you come back.

And, speaking seriously, all medical meetings are good, but this is really an opportunity that offers more than usual.

MEDICINE

Wm. B. Porter, M. D., Dept. Editor.

The Known and the Unknown About Psoriasis.

A few years ago, Jay Frank Schamberg, Philadelphia (Journal A. M. A., Oct. 18, 1924), and George W. Raiziss carried out some studies (which have never been published) on the purin metabolism of psoriatic patients. They failed to find any disturbance of the uric acid metabolism. Unless there is coincidentally a distinct renal factor present, the blood uric acid is normal. The question of any etiologic relationship between gout and psoriasis is answered definitely in the negative. There is no demonstrated evidence that psoriasis is associated with any disorder of the gastro-intestinal tract or of the pancreas. There is no special habit of body or any nutritive disorder associated with psoriasis. Attacks of psoriasis have been reported in the literature as coming on after shock, fright and similar causes. Some authors have suggested a neuropathic origin as the cause of the disease. Schamberg can find no adequate scientific basis to warrant psoriasis being regarded as a disease of nervous origin. Nor can he see any parallelism between psoriasis and any disease of ductless gland origin. No parasite thus far found can be incriminated as the cause. However, on the basis of extensive studies Schamberg believes that there is a nitrogen retention in psoriasis, but no

person possesses the scientific data that would warrant him in dogmatically affirming or denying the truth of either the parasitic or the metabolic hypothesis. The solution of the problem is for the future to determine. Until the cause of the disease is discovered, the most essential principle of therapeutics in psoriasis is to inactivate the psoriatic process; i. e., to convert the active into an inactive or quiescent stage. Then previously ineffectual remedies become effective. Failure in clearing up the eruption in psoriasis is not caused by ignorance of what remedies to use, but when to use them. Even the roentgen ray, a useful palliative agent, commonly fails when used during an inappropriate stage. The failure to recognize the inefficacy of roentgen-ray therapy in an active psoriasis has sometimes led to this method of treatment being persisted in to an unwarranted degree. Schamberg has seen cancer of the skin follow such ill advised efforts. Schamberg favors a low protein diet, as an effective mode of treatment. He says if one places a psoriasis patient for a number of weeks on a diet containing about 4 gm. of nitrogen a day, without other treatment, one will observe, particularly in extensive eruptions, an astonishing involution. Per contra, a diet of 20 gm. of nitrogen a day will tend to aggravate an existing eruption. There are often simpler and more rapid means of bringing about an inactivation of the psoriatic process. Different substances and methods have from time to time been advocated. The intravenous injection of vegetable proteins such as an extract of alfalfa seed, suggested by Van Alsten; the injection of an enterovaccine containing chiefly the fecal streptococcus and colon bacillus, advocated by Danyasz and warmly commended by Sabouraud; the subcutaneous or intravenous injection of a typhoid or colon bacillus vaccine, and finally, autoserum injections. All these agencies doubtless act in a similar manner but in different degrees. They all produce a leukocytosis but in different degrees. They all produce a leukocytosis, proportionate in large part to the degree of reaction induced. They may

have other side effects on antibody production, on the blood and skin enzymes, and likewise an influence on metabolism. Further light is needed on the exact effects induced. One of the most useful of these procedures is autoserum injections. The injection tends to inactivate the psoriasis and aid in inducing a state of quiescence. During this stage, the roentgen rays, chrysarobin, and many other measures, promptly effect a disappearance of the eruption. While autoserum injections do not act equally well in all cases, Schamberg's experience is that they constitute a valuable therapeutic measure. There are a few cases that are refractory to inactivation by any procedure. It is possible that certain drugs, injected intravenously or intramuscularly, may, without design, produce a secondary foreign protein effect.

Diagnostic Errors Leading to Uncalled for Appendectomy.

Henry Wald Bettman, Cincinnati (Journal A. M. A., Oct. 18, 1924), collected from private practice reports of some 300 cases in which appendectomies had been performed without relief. Patients could not always furnish accurate histories. Every case in which history was uncertain or inconclusive was rejected. This rigorous consorship left only 170 cases for statistical presentation, although fifty other cases had features of practical importance. A careful analysis of the 170 cases led to the rather startling conclusion that fully two thirds of all the patients had never been carefully studied before the operation, and the indications for any operation in at least one third of the cases were very imperfect indeed. Not one third of the patients had had a competent and thorough examination in the modern sense. Not that large a proportion had had an analysis of the gastric juice, and adequate observation under proper conditions or a complete roentgen-ray examination. Many were subjected to operation "on suspicion" because their digestive disturbances had resisted medical treatment and because many of them presented right iliac sensitivity, gaseous distention or other

signs or symptoms that seemed to point to the possibility of chronic appendicitis. In more than one third of the cases the indications for an operation were quite insufficient. Of the 300 patients, thirty-five complained of serious disorders traceable to the operation itself. The commonest sequels were hernia, ileac stasis, omental and other adhesions and neurasthenia.

SURGERY

A. E. Baker, M. D., Dept. Editor

The surgical procedure of operating to remove a chronically diseased appendix and not examining the organs of the upper abdomen, also, if a woman, the pelvic organs, is obsolete. Often a diseased appendix is secondary to Cholecystitis or peptic ulcer, or maybe vice versa. This explains the large percentage of appendectomies in chronic cases which do not benefit the patient.

Dr. Held's paper in the recent Am. J. M. Sc. on "Chronic Appendicitis and its Differential Diagnosis" emphasizes the deceptive and referred symptoms often associated with diseased appendix.

He states that:

"Chronic appendicitis is a borderline disease in surgery because the symptoms are so varied that the patient usually consults the internist long before he consults the surgeon, and because it leads to so many intra-abdominal complications that even removal of the appendix may not relieve the symptoms.

The symptoms of chronic appendicitis may be so pronounced that the diagnosis is evident, but in the majority of cases they are very vague.

Rolleston divided the symptoms into four groups: (1) reflex, (2) mechanical, (3) toxic, and (4) infective.

Reflex symptoms of chronic appendicitis are due to hypertonus and spasm of the stomach and failure of reflex relaxation on the part of the pyloric or ileocaecal sphincter leading to gastric or ileal stasis and therefore to excess of acid or toxæmia. The sensory phenomenon due to chronic appendicitis is

pain in the epigastric region. This may radiate down to the urinary bladder or even to the right thigh and simulate that of cystitis or sciatica.

The mechanical syndrome may be caused by the presence of foreign bodies in the lumen of the appendix or by adhesion of the appendix to the neighboring organs.

The absorption of bacterial toxins from the appendix may cause a general toxæmia or myocarditis, and may damage the mucous membrane in the stomach and intestines, thus giving rise to hemorrhage.

In the diagnosis of chronic appendicitis, a history of one or more acute attacks is important. In the absence of such a history, the diagnosis is difficult. The objective findings of importance are:

(1) Tenderness in the ileocaecal region.

(2) The character of the gastric secretions. Some clinicians maintain that when the mucous membrane of the appendix is ulcerated, hyperacidity is usually present, and when the appendicitis is complicated by adhesions hypo-acidity is present.

(3) Aaron's sign, pressure on the appendicular region causing pain in the epigastrium.

(4) Bastedo's sign, tenderness over the ileocaecal region on inflation of the colon.

(5) Tenderness over the appendicular region on the administration of an enema.

(6) Reder's sign, pain over the appendicular region upon rectal examination.

(7) Rovsing's sign, pain over the appendicular region when pressure is exerted over the left side at a point corresponding to McBurney's point on the right side.

With regard to the differential diagnosis the author discusses diseases simulating chronic appendicitis but in which the appendix is normal, diseases resulting from chronic appendicitis, and cases in which the primary disease had its starting point in another intra-abdominal viscus.

To the first group belong hysteria and neurasthenia. Another functional condition which frequently simulates chronic appendicitis is enterospasm of the entire colon or parts of the colon.

Caecal conditions which may suggest chronic appendicitis are the movable caecum and caecal tuberculosis, carcinoma, and actinomycosis. Other conditions rendering the diagnosis difficult are diseases of the right ovary and tube, prostatic conditions, and stones in the right kidney and right uterus.

Pediatrics

Frank Howard Richardson, M.D., Dept. Ed.

Last month we discussed in this column one of the duties of the medical fraternity in a community toward the local school or schools,—namely, that of offering to examine the children of the school, with the object of detecting gross physical defects or abnormalities in any of the children, and advising their correction in order that the educational work of the schools might go on unhindered by any preventable physical obstacles. A method of teamwork by the medical profession was outlined, which had proved successful in one community, and which had met with enthusiastic cooperation on the part of the school authorities and of interested parents. This scheme, in a word, consisted in the allocation of various segments of a complete physical examination to the various participating doctors; with the result that every child present at school on the day chosen, received a complete physical examination, including weighing and measuring, together with a careful charting of defects found for future reference, the guidance of both parent and teacher.

To those of us who were fortunate enough to attend the evening session of the Tenth District Medical Society at Robert E. Lee Hall, Blue Ridge, on September 24, last, another duty of the medical profession was strongly brought home as food for profound thought. It is not often that medical

"literature," so-called, runs the slightest risk of being classed as real literature; but if ever a medical paper was entitled to rank as literature, the one delivered by Dr. James K. Hall, of Richmond, on that occasion earned that distinction easily. The subject that he chose was Dementia Precox; and the picture that he drew of that tragic affliction, stalking the brightest and the most lovable of our boys and girls, filling the state hospitals with those on whom parents' fondest hopes had been centered, was one to make the least thoughtful pause, and wonder whether there might not be some way of preventing the costly toll that society yearly pays to this little understood malady. Making very conservative estimates of the large percentage of the inmates of our state hospitals that are where they are as a result of this condition, he confronted his hearers first with a rough computation of the staggering cost of caring for those unfortunates during the long years that stretch ahead of so many of them. He then startled us by quoting the opinion of men of note in the field of psychiatry, who are convinced that some four-fifths of these cases of dementia precox might have been saved from becoming such, had their incipient tendencies been recognized in time to lighten life's strain to their limited ability to meet it.

Insanity has been very helpfully defined as an inability to measure up to the responsibilities that society puts upon one. Thus, a perfectly sane assistant or clerk may break mentally under the increased business strain, if he is advanced to the headship of the concern. Similarly, a perfectly sane civilian may break under the increased strain of going to war. In the same way, many of these dementia precox cases might have lived out normal, useful lives in their respective communities, had the mental and emotional strains of their childhood and early youth been so tempered as to save them from coming to the breaking point. Now any one who has had to do with children and young people at all, is quite well aware that the most serious events in their

lives are those connected with their schooling. School life is the business life of the young; and if they are intellectually or emotionally inferior, school life is going to load them with burdens that they are inherently unable to bear. If they prove to be unable to measure up to the responsibilities that society has put upon them, we shall have insanity in some one form or another, as was noted at the beginning of this paragraph.

Now one has but to chat with any teacher or principal in our schools, to realize that there are 3 classes of children in these schools who are frankly suffering as a result of our failure to adapt our educational requirements to their contracted abilities. The first of these classes comprises the mentally retarded children, who will be found to comprise the lower 25 per cent of any class of children to whom any sort of a rough mental test is administered. These children are hopelessly outclassed by their fellows; many of them are a year, two years, or more older (and hence larger) than their brighter classmates; and, as they are constantly being humiliated by being surpassed by younger children, as well as being kept in and otherwise punished for failures, they are being subjected to an unbearable strain, that is none the less cruel from being unrecognized. These children may drop out of school and go into unskilled work,—a most devoutly-to-be-desired eventuality for them. They may stay in school, and compensate for their humiliated pride by becoming mischief makers, professional bad boys, and eventually petty criminals or worse. They may, and many of them do, simply break under the strain, and find a refuge in our state hospitals.

The second class consists in the upper 25 per cent of any class that is subjected to mental testing. What is school doing for them? The middle 50 per cent who constitute a sort of average are fairly well served by the curriculum, which strives to fit the average; but what of the effect of school upon this elite 25 per cent? School ought at least to keep the children occupied for

their whole time. But these children can cover the work assigned them in just one-half the time allotted for it. What will they do? One of two things. Either keep themselves busy by exercising their own ingenuity (and probably devising deviltry rather than socially acceptable activities); or kill time by doing nothing, and thus become hopelessly lazy, because they have nothing to call for effort.

The third class is made up of what the psychologists call **psychopathic**, or **mentally unstable**, children. These are the true **incipient cases of insanity**, mild or severe in type, which will develop if the children are allowed to go on under ordinary school strain. Dr. H. H. Goddard, formerly of Vineland, describes these children, and says that the well-trained teacher can easily recognize them. They are solitary, and do not get along well with their classmates, preferring to associate with adults. Their food preferences are unusually strong for or against certain articles of food. They have violent tempers; and are destructive, moody, and easily depressed. They are poorer in memory and better in reasoning power than the feeble-minded, with whom they must not be confused. This accounts for their poor work in memory-requiring subjects; while they may be unusually shrewd in devising devilment, as well as being cruel, or sexually perverted. Such cases are headed direct for the state hospitals, either directly if they and their relatives are fortunate, or by way of the reformatory and the prison, if they are less lucky.

There is probably no one person in the community who can approach this matter acceptably, except the doctor. The school authorities recognize that the classes that we have called "one" and "three" exist; but they are powerless to initiate measures to diagnose the two conditions, and to segregate those found suffering from them. The parents may be, and probably are, willfully blinding themselves to the existence of these conditions; their pride will not allow them to accept such a diagnosis from the teacher or the principal; but they

are torn with anxiety nevertheless, and if their children can be **medically** diagnosed as needing special care, they will gladly and with profound relief take suggested steps, that they would never have consented to take at the suggestion of teachers alone.

The doctor need not think that the services of an alienist or a psychiatrist are required. All that is urged here is the taking of the initiative, which is distinctly up to him, and to him alone. Even if he is unwilling, or feels himself unable, to familiarize himself with the very simple and easily-learned technique of the simplified Binet-Simon intelligence tests, he can bring up the whole subject before the faculty of the school, preferably in connection with the school parents as they come into joint session with the teachers in the Parent-Teacher Association. It will not be difficult to secure someone who can and will make these tests for the whole school, at a very reasonable and moderate cost; and there are many ways in which such a service can be procured, practically gratis. It would be hard to estimate the improvement in the general morale of a school and of the community it serves, that follows such a clearing of the decks. The elimination alone of the grossly malgraded children will enormously facilitate the educational progress of the normal or average children who are left in the grades. The proper placing of boys and girls who are intellectually hopeless, by freeing them from the unequal mental battle and letting them do work that they are capable of, will change many of them from school "terrors" into placid, workaday young citizens, "carrying on" perfectly acceptably in their comparatively limited but quite useful fields. Best of all, the great toll that such a community has been paying in insanity, and the infinitely greater though far less noticeable cost in neuroses and the less easily detected psychoses, will be checked.

Physical Hygiene let us have, by all means. But let us realize that Mental Hygiene, that youngest of the branches of preventive medicine, is awaiting the helping hand of the medical profession;

and let us not hesitate to extend this helping hand, through the mistaken fear that it will not be accepted gladly by the communities that we are serving, and that have learned to trust us when we offer help, even though it be before they have realized their need for our help.

Roentgenology

Robt. H. Lafferty, M.D., Dept. Editor.

Dr. Henry K. Pancoast of Philadelphia read a very interesting paper at the last meeting of the American Medical Association on: "Importance of Careful Roentgen Ray Investigation of Apical Chest Tumors."

This is published in The Journal of Nov. 1, 1924, and presents the following conclusions:

1. An infiltrating growth, either endothelioma of the plura or sarcoma, probably of bony origin, may occur in the apex of the thoracic cavity and produce a symptom complex of pain in the upper extremity and cervical sympathetic paralysis, closely simulating that of many other conditions, such as spinal cord or meningeal tumors, neck tumors, crevical rib and vertebral neoplasms.

2. Roentgen-ray examinations of the shoulder alone before the appearance of eye manifestations may fail to reveal such a growth, and a wider area should be included in obscure cases.

3. In roentgen-ray examinations of the spine and for cervical rib, the roentgenograms should be carefully studied for any increased density in the apex of the lung or for erosion of the upper ribs or adjacent vertebrae.

Dr. Gosta Forssell of Stockholm Sweden delivered the Caldwell Lecture at the Sept., 1924, meeting of the American Roentgen Ray Society. He chose as his subject: "Experience in the Permanency of Radiological Cure in Cancer."

His reports, to those who have been following radio-therapy since its very early days, is, to say the least, encouraging. In Sweden the work of cancer

therapy is under direct supervision of the government and so they are able to keep a very close record of results. His paragraph on "Indications for Radiological Treatment in Malignant Growths" is very interesting.

Dr. Dalton Kahn of Toledo has a paper in the October Journal of Roentgenology on "The Treatment of Diphtheria Carriers by Roentgen Radiation." In 1922 he reported 185 cases treated. 147 were released by negative culture and 38 released on negative virulence tests. Later they succeeded in reculturing 152 of these cases first treated. All of these showed negative virulence tests and 26 showed a positive morphological culture. 21 of these 26 came from those who were dismissed with positive morphological culture. He reports 26 additional cases treated with 100 per cent good results. He calls attention to the fact that the treatment is painless, harmless, and 100 per cent efficient.

Gynecology and Obstetrics

Robert E. Seibels, M.D., Dept. Editor

Dr. Edward L. Correll reviews in October Surgery, Gynecology and Obstetrics the article by E. E. Bunzel "A Statistical Review of the Toxaemias of Pregnancy" which was published in the July, 1924, American Journal of Obstetrics and Gynecology.

In a series of 465 cases of gestation toxaemia the pregnancy was terminated or labor was induced in 100 (23.7 per cent). This was done by dilatation and curettage in four cases; hysterotomy and sterilization in three; hypodermic injections of pituitrin in three; artificial rupture of the membranes in six; the introduction of a bougie in twelve; the introduction of a Voorhees bag in fifty-one; vaginal hysterotomy in three; and abdominal caesarean section in eight-
een.

Of the eighteen abdominal caesarean sections, fifteen were performed for indications other than the toxaemia. Operative induction after the fifth month of pregnancy was done because of toxaemia in only sixty-nine cases (14.8 per

cent). Fifty-four patients (11.1 per cent) had convulsions. Two had been toxic in previous pregnancies and two had had toxæmia with convulsions. The onset of convulsions occurred in the fifth month of pregnancy in two cases; in the sixth month in four cases; in the seventh month in twelve cases; in the eighth month in seventeen cases; and in the ninth month in nineteen cases.

Of the fifty-four women with convulsions, ten (18 per cent) were private patients, most of whom were first seen after the onset of the toxæmia; fifteen (28 per cent) were clinic patients; and twenty-nine (54 per cent) were emergency cases.

The convulsions developed before labor in thirty-one cases (57 per cent); during labor in seven cases (13 per cent); and after labor in sixteen cases (30 per cent).

Labor was induced or hastened in eighteen cases (33.3 per cent). The method used was vaginal hysterotomy in two cases; abdominal caesarean section in two cases (both with a deformed pelvis); the introduction of a bougie in one case; and the introduction of a bag in thirteen cases.

In the fifty-four cases of convulsions there were six maternal deaths (11.1 per cent). Labor was induced by bags in four of these cases. In one, delivery was accomplished by version and breech extraction because of a prolapsed cord; the baby was saved but the mother died of shock. In another, that of a woman who had sixteen convulsions before and during labor, a dead baby was delivered with difficulty by means of instruments. In two cases in which bags were employed, the convulsions continued postpartum and the mother died of an overwhelming toxæmia. In one of the latter cases the liver was four times the normal size and contained many haemorrhages. Of the two maternal deaths occurring in cases in which bags were not employed, one occurred before delivery following the signs of a cerebral haemorrhage and the other followed a hurried difficult forceps delivery done because of convul-

sions which began in the second stage; the convulsions continued in the postpartum period.

The onset of the convulsions occurred before delivery in four cases and during delivery in two cases. There were no deaths in the group of sixteen cases in which the convulsions began after delivery. Five of the patients with convulsions who died were in the eighth month of pregnancy, and only one was at term.

Of the babies in the fifty-four cases of convulsions, twenty-six (49 per cent) left the hospital alive and well, and six (11 per cent) died after birth. Four of the latter were premature and in one haemorrhages were found in the viscera at autopsy. In one case no definite cause of death was found. Twenty-one (40 per cent) were stillborn. Of these, eight were macerated, one showed osteogenesis imperfecta, two were injured at the time of delivery, and in four visceral haemorrhages were found at autopsy. In six no definite cause of death could be discovered.

In the entire series of 465 cases there were twenty-five pairs of twins and one set of triplets. Three hundred and eighty-two babies (78 per cent) were born alive, and 111 (22 per cent) were stillborn.

In the 111 cases of stillbirth, pregnancy was interrupted by dilatation and curettage in three and by hysterotomy in four. There were forty-five cases of macerated fetuses, thirty premature births, fourteen deaths due to injuries at the time of delivery, one case in which the mother had meningitis, one case in which the mother had a cardiac lesion and pneumonia, ten cases in which no cause of death could be found, and three cases of congenital anomaly (hydronephrosis, general anasarca, and osteogenesis imperfecta).

Of the 382 babies born alive, twenty-nine (7.6 per cent) died subsequently in the hospital from the following causes: a congenital heart condition, one; congenital syphilis, one; congenital cleft of the abdominal wall, one; visceral haemorrhages, three; pneumonia, three; and premature birth, twelve. In eight cases

no demonstrable cause of death could be found. Three hundred and fifty-three babies (72 per cent of all those born of toxic mothers) left the hospital alive and well.

The maternal deaths in the entire series of 465 cases numbered fourteen, a gross maternal mortality of 3 per cent. In four of these fourteen fatal cases, nine of which were emergency admissions, death was due to other complicating conditions. In one case, that of a woman who had been delivered of triplets, autopsy showed myocarditis, bronchopneumonia, and chronic nephritis. In one case of placenta praevia the child was delivered by version and breech, the placenta was extracted manually, and the uterus packed. One woman died before delivery of cardiac insufficiency, and one died with symptoms of meningitis. Therefore, the corrected maternal mortality of pregnancy with toxæmia was 2.1 per cent.

The article is summarized as follows:

The incidence of pregnancy with toxæmia is 6.3 per cent, and convulsions occur in 0.7 per cent of all pregnancies.

Careful prenatal care with hospitalization of patients showing signs or symptoms of a complicating toxæmia is essential. During the prenatal period, foci of infection, especially in the mouth, should be cleared up. The patient's home conditions should be investigated and corrected in order to eliminate any source of worry.

Many cases go into spontaneous labor. Even when convulsions have developed, induction is contra-indicated until medical treatment has been given a fair trial.

A "Toxic Follow-Up Clinic" is of great importance, for here the patients may be observed and advised while they are in the non-pregnant state. In such a clinic a pre-pregnancy course of treatment might be given which would lead to improvement in prenatal care.

Urology

A. J. Crowell, M. D., Dept. Editor

The treatment of prostatic hypertrophy is either palliative or radical. The first stage or the premonitory period is characterized by slight frequency and difficulty in starting the stream. There is practically no residual urine. With the aid of bladder irrigations, the administration of antiseptics by mouth, and general hygienic measures the patient will often get along very well. The obstruction due to the enlargement may not increase.

In the second and third stages, those of bladder insufficiency with increased residual urine, and the period of incontinence with chronic retention, the grave complication of urosepsis from back-pressure may result. Acute retention, which may occur at any stage, may be relieved by proper catheterization or may develop into chronic retention. Cystitis, stone, pyelitis, pyelonephritis, haematuria, epididymitis, and weakening of the cardiovascular and respiratory systems may or may not be present.

Age is not a contra-indication to surgical treatment. In every case a careful examination should be made and the necessary measures undertaken to prepare the patient for operation. The general practitioner can make the necessary tests to determine the reserve power of the heart, the haemoglobin, the blood pressure, the amount of twenty-four-hour urine and its specific gravity and urea content, and the phenolsulphthalein excretion. If the retention catheter or frequent catheterization are not tolerated, suprapubic drainage is indicated. Hygienic measures, regulation of the diet, measures to promote proper elimination, the internal use of antiseptics, and bladder irrigations are indicated. Operation should be preceded by cystoscopic examination.

Prostatic obstruction is a surgical condition and should be operated upon before permanent injury is done. The

sooner operation is performed following the premonitory signs the better the prognosis.

State Medicine

L. B. McBrayer, M. D., Dept. Editor

Promoting County Health Work.

"For the reasons which are well understood public health efforts has been centered mainly on the larger towns and cities. Health protection for the people living in country districts has been neglected. The tide is turning. The development of county health organization—which is now going forward with considerable momentum in the United States—is providing a service for the smaller towns and rural communities.

"In the Southern States county health administration developed naturally and inevitably from the effort to control hookworm disease. This is a rural disease; its control is a problem in rural sanitation; a serious effort to handle this one problem in rural sanitation called into being county organization. County organization once established, control of hookworm disease became merely an item in a general health program under state and county administration. The demonstration thus given of the value of the county as a unit in the state scheme stimulated a movement which is becoming general. At the close of the year county programs on a full-time basis were in operation in about 192 counties in the United States."

"The plan of work pursued by the county health departments has been evolved from experience, is applicable under a wide variety of conditions and has stood the test of time. Though there are minor differences to meet local conditions, the most important activities which are more or less common to all the units, group themselves under the following main heads: (1) public health education; (2) sanitation; (3) control of communicable diseases; (4) adult and child hygiene. The demonstrations are so planned as to enable any county to undertake at the start

in a small way and with the least expenditure of money, the line or lines of work which for that particular county give promise of yielding the greatest results in lives saved and sickness prevented. Other activities are added and the health department is expanded as the work proves effective and additional funds are provided.

"Public health nurses are being employed in increasing numbers. They furnish a close bond of contact between the health staff and the people. When a case of communicable disease is quarantined they visit the home and give advice as to the methods to be followed in caring for the patient and in preventing the spread of the disease to other members of the family or to the community; when children are found to be suffering from defects they consult with the parents and urge them to have the defects promptly corrected; and they render valuable assistance to the health officer in the organization and conduct of clinics, in securing the co-operation of established welfare agencies, and in carrying out the general program of health education and community development.

"In the development of county health work the Board has been serviceable in providing funds for initial demonstrations. Its contributions have stimulated appropriations by counties and legislatures; and the demonstrations thus supported are creating a sustaining public sentiment. The state and county appropriations usually show wholesome growth from year to year, and are seldom reduced even in the face of the severe economic depression that has necessitated curtailment of many useful forms of service."

Elimination of Politics From Public Health Work.

W. S. Rankin, New York (Journal A. M. A., Oct. 25, 1924), says that the appraisal of any piece of public health work will be a matter of personal and political opinion until acceptable standards are established. As long as political authorities have to deal with officers, they can retain or replace them

with only slight political embarrassment; but, when they have to deal with records of work which possess two qualities, (1) verifiability and (2) comparability, their main responsibility shifts at once to the maintenance of records of work, and political and personal considerations are submerged in view of this greater responsibility. He proposes an exact numerical expression of group judgment of health officials as a substitute for individual opinion in measuring public health activities. Standards should not be based on provisions for work, appropriations or personnel; the form of health organization, whether civil service is used or not used; mortality rates, which may be used to compare health conditions but not to compare health work; and methods of work which should not be standardized; but on the essential results of health work. For example under communicable diseases: (1) the number of cases reported as compared with the number of deaths from certain diseases; (2) the average number of follow-up visits by nurses and inspectors for each case reported; (3) the office study given communicable disease work; (4) the use of the standard procedures of isolation and quarantine; (5) the percentage of communicable diseases hospitalized; (6) the percentage of the population vaccinated against smallpox; and (7) the percentage of children immunized against diphtheria. Similar criteria could be used for tuberculosis prevention and venereal disease control school medical inspection, etc. Following the assignment of relative values to the more important problems, we could distribute the weight under each problem. The standards on which a rate is to be determined should be the figures already arrived at by the best departments whose health officers have decided to use group judgment in determining relative values, and in influencing program, budget and activities. Special regional problems, as, for example, malaria in the South, or plague on the Pacific Coast could be assigned additional weights. To the individual health officer such a score card furnishes the

strong support of health officers as a group in dealing with those special interests which insistently project themselves into the construction of health programs. To the profession of public health workers and to the public, numerical judgment of relative values would afford, after two or three years for judgment of programs, a basis for a classification and publication in national journals of the professional standing of health departments.

News Items

Dr. Henry A. Christian, Professor of Medicine in Harvard Medical School, spent the day, Nov. 12, with the Charlotte profession, a guest of the Presbyterian Hospital. Beginning at 2 P. M. Dr. Christian held a medical clinic at the hospital which continued until 5:30 and from then until 6:30 a barbecue supper was served on the spacious hospital grounds. After this Dr. Christian delivered an address in the hospital reception hall, in which he discussed "Some Features in the Diagnosis and Study of Cases of Nephritis." The Charlotte profession attended these various features almost to a man, and also a very great many doctors from other places. All received much more than value received and heartily thank Dr. Christian and the hospital management for this splendid privilege.

Dr. Bernard Kinlaw, who for the past year has been on the staff at the N. C. State Sanatorium for Tuberculosis, has accepted a position on the staff of the Park View Hospital at Rocky Mount, N. C., as an internist and will devote special attention to the chest and heart.

The Seaboard Medical Association of Virginia and North Carolina, will hold its next annual meeting at Rocky Mount N. C., Dec. 2, 3, 4, 1924.

The N. C. State Tonsil and Adenoid Clinic closed the season at Charlotte Oct. 29. During the season, ninety-nine operating days, there were 2433 children operated.

Dr. Thos. Brockman, Greer, S. C., announces to the profession that after eighteen months special study and preparation, he proposes limiting his work to the injection method of treating hemorrhoids and allied conditions.

William S. Scott and Miss Mary Powell Wilson, both of Fredericksburg, Va.,

The National Board of Medical Examiners report examination held this summer in the following cities: Tuscaloosa Ala.; Albany, N. Y.; Dallas, Tex.; Buffalo, N. Y.; San Francisco, Calif.; Cincinnati, O.; Denver, Col.; New York, N. Y.; Hanover, N. H.; Boston, Mass.; Indianapolis, Ind.; Iowa City, Ia.; Baltimore Md.; Louisville, Ky.; Los Angeles Calif.; Ann Arbor, Mich.; Minneapolis, Minn.; Omaha, Neb.; Chapel Hill, N. C.; Grand Forks, N. D.; Oklahoma City, Okla.; Portland, Ore.; Philadelphia, Pa.; Pittsburgh, Pa.; Chicago, Ill.; Syracuse, N. Y.; Galveston, Tex.; New Orleans La.; Nashville, Tenn.; Burlington, Vt.; Charlottesville, Va.; St. Louis, Mo.; New Haven, Conn.; and the following R. O. T. C. Army Camps: Carlisle Barracks, Pa.; Fort Snelling, Minn.; Camp Lewis, Wash.

There were a total of 180 candidates taking the final examination and 238 taking first two years examination.

The National Board of Medical Examiners was organized to establish a standard qualifying examination of such character that its certificate of qualification to practice medicine would be accepted by medical licensing boards in all States, and the holder of this certificate be granted a license to practice without further examination. To date its certificate is accepted by 29 States and Territories and several foreign countries. The Board aims not only to safeguard and simplify the process of determining those who are qualified to practice medicine, but to aid the medical colleges and State authorities in promoting high standards of medical education and practice. Examinations are open only to students of Class A Medical Schools, which automatically makes it impossible for candidates with fake diplomas to secure its

certificate and in this way helps the State Boards in keeping out unqualified practitioners.

Charles H. Barlow, Portsmouth, Va., 47 years of age, died July 21 of cerebral hemorrhage.

Liston L. Johnson, Fletcher, N. C., 73 years of age, died October 2, at a hospital in Hendersonville.

Edwin R. Wilson, Sumter, S. C., 47 years of age, died September 29.

William J. Keller, Spartanburg, S. C., 55 years of age, died October 2.

Wm. A. Bradsher, Roxboro, N. C., 47 years of age, and for several years city-county health officer, died September 17, myocarditis.

J. A. White, Greenville, S. C., 63 years of age, died September 12.

Richard A. Freeman, Burlington, N. C., 78 years of age, died September 17, in a Greensboro hospital.

Frank W. P. Butler, Columbia, S. C., 68 years of age, died September 17.

Henry M. S. Cason, Edenton, N. C., 48 years of age, died from angina-pectoris September 23. were married July 31.

James W. Watkins, Reidsville, N. C., 54 years of age, died September 1.

Luther T. Whitaker, Enfield, N. C., 69 years of age, died recently of heart failure.

John O. Lea, North Charleston, S. C., 43 years of age, died September 12.

Tom R. Kelly, Olanta, S. C., 59 years of age, died October 6.

Stephen W. Fielder, Fries, Va., 75 years of age, died August 28.

Publications Received

Vol. 3 of the 34th Series of the International Clinics, J. B. Lippincott Co., is of unusual merit. The discussion of Public Health in the U. S. by the Surgeon General of the Public Health Service is a terse statement of the ac-

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complishments and purposes of this branch of public service. Dental Hygiene, the Malaria Carrier and Parasite, Communicable Disease Control and Health Examinations follow and thus we are given the latest information on many phases of preventive medicine.

Colored plates illustrating the Dick skin test in Scarlet fever are especially commended.

The outlook in insulin treatment is a timely subject presented in a hopeful vein by two of Dr. Banting's co-laborers.

FUNDAMENTALS OF HUMAN PHYSIOLOGY. By R. G. Pearce, B.A., M.D., formerly Director Medical Research Laboratory. Lakeside Hospital, Cleveland, and J. T. R. McCleod, M.B., D., Fc.F.R.S., Professor of Physiology Univ. of Toronto. Third Edition. C. V. Mosley Co., St. Louis, 1924.

We do not keep up with the advances in any medical science. In all probability, we lag further behind in physiology than in any other of importance. We hear a hundred essays on pathology, bacteriology or chemistry to one on physiology. It seems to be tacitly assumed that we know physiology. This volume is an epitome of the present knowledge of the subject written in a thoroughly delightful style.

MISCELLANEOUS

Charlotte, N. C.

My dear Sir:

The article in your last issue on Rhus Poisoning by my old friend, L. J. Smith, is very interesting.

I have never tried Tannic Acid as a remedy, but I have used and recommended for years, dilute Ammonia water, which is not only a specific for Rhus Poisoning, but is also infallible as a diagnostic measure.

I got the Rx. from my father, who was not a physician, and I do not know where he got it, but I have never seen it mentioned in any medical work.

A one per cent solution as a lotion will prevent the poisoning when one is exposed.

A five per cent solution will cure it by one or two applications. The only objection is the severe pain for about five seconds after the Ammonia is applied, but the relief is so prompt and permanent that even little children will ask for its use after they have once used it.

The diagnostic feature is this,—I have so far never seen any other similar eruption in which the Ammonia causes any pain.

My own theory, based entirely on the Ammonia cure, has been that the Rhus poison was acid in character and the Ammonia neutralized it.

Sincerely yours,

G. M. MAXWELL.

Scholarships on the Oliver-Rea Foundation for graduate study in Medicine are available at the New York Post-Graduate Medical School and Hospital.

Inquiries should be addressed to the Dean, 301 East Twentieth Street, New York City.

Maternal Welfare.

To the Editor:

A nation-wide movement for improved conditions in maternal welfare is being inaugurated through the combined efforts of a joint committee representing the American Gynecology Society, the American Child Health Association, and the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons.

An appeal is being made to the Secretaries of the State Medical Associations to enlist the co-operation of their members and also of the constituent County Medical Societies to stress the subject of obstetrics in the programmes of their meetings and try to have more papers and discussions on the topics vital to this most essential branch of our work.

The reason for the propaganda is that recent statistics are published showing a deplorably high mortality in maternity work in our country. A Washington report gives the United States the unenviable position of third from the highest death rate in both sepsis

and eclampsia among the seventeen civilized nations of the world. These two accidents are almost absolutely preventable. Among the reports from sections where pre-natal care is taught and where aseptic care observed in labor the mortality is reduced one-third to one-half the average in the same region.

So many other features while not so tragic demand reform in obstetrics that the committee hopes within five years that not only the mortality of mothers and children may be reduced just as the profession has cut down the death rate in typhoid fever, tuberculosis and diphtheria in recent decades, but also that obstetrics may be again placed on the plane with internal medicine and surgery, a dignity which it formerly occupied in the colleges and in the profession, as one of the three great branches of the healing art.

This is a work of education, and it demands the co-operation of teachers and specialists in obstetrics, general practitioners, nurses, and the general public, to accomplish so ambitious a programme.

(Signed) Fred L. Adair, M.D., Minneapolis; Henry Schwarz, M.D., St. Boston; Geo. W. Kosmak, M.D., New Louis; Robert L. DeNormandie, M.D., York; Frank W. Lynch, M.D., San Francisco; Ralph W. Lobenstine, M.D., New York; Wm. Clark Danforth, M.D., Evanston, Ill.; Geo. Clark Mosher, M.D., Kansas City, Mo.

Can Leprosy Be Cured?

Few people in this country other than physicians ever see a case of leprosy although it is estimated that between five hundred and one thousand lepers are still at large in the United States. Except the disease be in its last stages the average person would never recognize it. Lepers have been known to live in communities for years before being recognized as such. Often these persons are discovered to be lepers when applying for treatment of some other condition.

Recently three lepers have been discharged from the National Leprosarium

at Carville, Louisiana as having now no manifestations of the disease. To all intents and purposes, they have been cured although the doctors merely certify that the disease has been arrested and that these persons are no longer a menace to the public health.

The treatment at Carville, while by no means wholly confined to the use of special preparations of chaulmoogra oil, depends very materially on these preparations for its efficacy, or in other words their use is regarded as an important adjunct of the treatment.

The accommodations for lepers at Carville have never been sufficient to take care of all the lepers who apply. At present there are 211 beds, all of which are filled, but there will soon be facilities to care for a total of 415 lepers and it is believed that the new buildings will be rapidly filled as there is a large waiting list.

The timely provision for the isolation and treatment of these unfortunate victims of this terrible disease will, no doubt, diminish the spread of leprosy in the United States, a matter that is already giving great concern to both National and State health officers.

Building Up Reduced States.

The reduced state the average influenza patient is left in after a siege of the infection, points plainly to the need of a reliable reconstructive.

Until full vigor is regained the patient's lowered resistance makes him susceptible to fresh respiratory infections.

The continued use of Cord. Ext. Ol. Morrhuæ Comp. (Hagee) during convalescence from influenza or other infections, charges the patient's tissues with needed resistance and enables him to avoid and to the more successfully cope with complicating conditions.

Hagee's Cordial is a tissue food of high order, possessing a distinctive value in increasing resistance against respiratory diseases.

An outstanding advantage of Cord. Ext. Ol. Morrhuæ Comp. (Hagee) is that it offers the patient every property

of cod liver oil, yet is exceptionally palatable and may be administered for long periods without causing distress.

Armour and Company announce the addition of Parathyroid and Calcium Lactate Tablets. Each tablet contains 1-20 grain of pure Parathyroids and 2½ grains Calcium Lactate U.S.P. These tablets are packed in bottles of 100 and they are obtained from drug trade and dealers in physicians' supplies everywhere.

The Palatable Liquid Quinine Preparation.

"A child will take it and lick the spoon."

How often you are called upon to prescribe quinine, and how difficult it is to give it satisfactorily to infants and small children, who detest its intense bitterness.

Pills, tablets and capsules, ordinarily employed to mask the taste, cannot be given to these little patients. Many adults also find difficulty in taking them. Furthermore, the absorption of the drug is more or less retarded when it is given in these forms. Experienced physicians know instances, especially in low fevers, where quinine pills, tablets, and even capsules have been passed by the patient unchanged.

By prescribing Coco-Quinine all these difficulties are overcome. Each average teaspoonful, ninety-six minims, contains two grains of true, unchanged crystals of quinine sulphate suspended in a bland, chocolate-flavored, syrupy medium that masks the bitterness but does not retard absorption.

Infants and small children take Coco-Quinine cheerfully. In this form the dose of quinine sulphate may be large, yet so palatable that, as one physician said, "A child will take it and lick the spoon."

Coco-Quinine will not disappoint when prompt, full quinine effects are desired.

Your prescription pharmacist carries Coco-Quinine. It is in the stock of practically every pharmacy in the United States.

Supplied in pint and gallon packages. Write us for a sample and further information.

Vaccine Therapy.

Patients vary in their response to the antigenic stimulation supplied by bacterial vaccines; due allowance must be made for such variation when employing bacterial vaccines.

But the leading laboratories are exerting themselves to reduce the variations in the quality of bacterial vaccines to a minimum. At one time this seemed to be an easy matter, but with the application of more rigid tests it was found that bacteria could not be tagged by name; one culture might be actively antigenic, and another almost inert—both of the same organism, but from different strains.

The bacteriologist has found a more trustworthy method of standardizing vaccines than by count—though counting has not been discarded. He can now tell whether a vaccine is really antigenic or not—whether antibodies are developed in the blood in response to the injection of the vaccine.

New literature on some of the vaccines in most common use is offered by Parke, Davis & Co., whose announcement appears elsewhere in this issue.

Calcium and Guaiacol Intravenously For Tuberculosis.

In the treatment of no other disease have so many remedies been tried as in tuberculosis. Out of an extremely long list of remedies, two of them, guaiacol and calcium are prominent as having stood the test of time. This is evidenced by their extensive employment by clinicians and practitioners.

With the demonstration of the intravenous method as a practical and safe procedure, many physicians inquired of Loeser as to the possibility of administering a compound of calcium and guaiacol intravenously. After three years of experimental work at the New York Intravenous Laboratory, under the supervision of Loeser, it was demon-



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WHERE? New Orleans, Louisiana

WHEN? November 24-27, 1924

If you are not a member, you should be, and can be if you are a member of your state and county medical society—that is the only requirement. You see how we tie-in with organized medicine in your state—you say who can be our members.

Dues only \$3.00—for that small sum you get membership in a live, virile, progressive medical Association and a Journal that is worth several times that amount—the Association's Journal, the Southern Medical Journal.

"Let us see if we cannot get every man in our State Association to enjoy the privilege of the Southern Medical Association and receive the Southern Medical Journal, a periodical which is second to none. Let the slogan be Join the Southern Medical Association."—Editorial, Jr. Fla. State Med. Assn., May 1924.

You WILL join eventually—why not NOW?

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notice the up-to-date, wide-awake, progressive, forward looking fellows are those who go to the Southern Medical Association meetings—they read the Association's Journal, too.

"Gosh! There ain't no such animal!" You remember the old boy who did not believe it even when he saw it at the circus. Well, there are a lot of M. D.'s who say they don't believe in medical meetings, but we

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strated that calcium guaiacol sulphonate could be adapted for intravenous injection.

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Physicians employing Loeser's Intravenous Solutions of Calcium Guaiacol Sulphonate express belief in its value in pulmonary tuberculosis and results in cases with intestinal symptoms are exceedingly encouraging.

Descriptive literature and reports of clinical trial can be obtained by addressing the New York Intravenous Laboratory, 100 West 21st Street, New York City, N. Y.

Southern Medicine and Surgery

VOL. LXXXVI

CHARLOTTE, N. C. DECEMBER, 1924

No. 12

DIPHTHERIA PREVENTION.*

By C. W. Armstrong, M.D., Salisbury.

Since 1895, when diphtheria antitoxin first came into general use for treatment and passive immunization, the medical profession has felt hopeful that diphtheria would soon be robbed of its terrors. To a considerable degree this hope has been realized. Twenty-five years ago, one hundred and fifty persons out of every hundred thousand succumbed to this disease. We have seen in North Carolina year by year the death rate from the preventable diseases, typhoid and tuberculosis, for example, being gradually but surely lowered, while the death rate from diphtheria has been gradually increasing despite the widespread general use of antitoxin as a remedy.

It is therefore perfectly apparent to every right-minded physician that the solution of the problem or the lowering of the mortality from diphtheria depends almost wholly upon lessening the morbidity. The medical profession has within its grasp the means by which it can completely eradicate diphtheria, and it is my hope in presenting to you this outline of the modern methods of prevention that you will pass this on to the general public and by your influence create among your clientele a demand for these principles to be put into effect in their homes. One of the chief difficulties in the prevention of diphtheria arises from fact that so many healthy people carry diphtheria bacilli in their throats (carriers). It has been found that during the winter season about one

per cent of the entire population are carriers. Of course it is manifestly impossible for us to isolate this large number of people even if it were practical for us to make culture from the throats of so large a number and identify the carriers.

The remedy for this situation lies in the Schick testing of the susceptible age group and immunization of the positive reactors by means of toxin-antitoxin. More than half of the cases of diphtheria occurring in this county during the past five years were in people who, in-so-far as can be determined, had never come in contact with an actual case of diphtheria. This is the group of people whom you see trying to figure out where their children got diphtheria. In an effort to remedy this situation the Board of Health of this County has adopted a regulation which places in quarantine a person found to be a carrier until he has shown two successive negative cultures. All known contacts with an actual case of diphtheria are required to show two negative cultures before being released from quarantine and instead of placing the case in quarantine for a definite period of time, it is required that two successive negative cultures be shown before release, be this two weeks or two months. There has been complaint on the part of some about the enforced quarantine of children who were apparently perfectly well. It is true that these children are well, but you will realize that they are a far greater menace to the community than an actual case of diphtheria, since they are up and around and are perfectly capable of transmitting the disease. The family physician can be of a great deal of help in this matter by explaining to his patients the importance of observing such a quarantine. I realize that we can never hope to accomplish much

*Read before the Ninth District Medical Society meeting at Salisbury, N. C., October, 1924.

in the prevention of any disease by quarantine, still quarantine we must. But our only hope of eradicating diphtheria lies in the employment of toxin-antitoxin as an immunizing agent.

Diphtheria antitoxin is the prevention of diphtheria. When antitoxin is used as an immunizing agent its protective action begins in a few hours and lasts for an average period of two weeks. Antitoxin is of value therefore when susceptible children come in contact with an actual case of diphtheria and immediate protection even though of short duration is desired. Owing to this short period of time during which antitoxin protects, it is apparent that it is not reliable as a protective agent, except in emergency. Toxin-antitoxin, where immediate protection is desired, is of no value since its protection never develops inside of six weeks.

Active Permanent Immunization by Means of Toxin-antitoxin—Like so many of the important discoveries in the field of medicine the development of immunity as a result of injections of toxin-antitoxin was first discovered accidentally in the course of animal experimentation. It was found that guinea pigs which were used to determine the strength of antitoxin later developed an immunity if the antitoxin was not quite neutralized by toxin.

In 1893 Ehrlich showed that this was true and three years later Park discovered that either slightly neutralized or slightly over-neutralized diphtheria toxin would produce an active immunity in animals. In 1913 Park and Zingher began work in the active immunization of children against diphtheria through the injection of toxin-antitoxin. They have since conclusively demonstrated the harmlessness and effectiveness of the method. Their results have been confirmed in various institutions and groups of population in this country and abroad. The administration of toxin-antitoxin is a simple procedure, the injection being made either subcutaneously or intramuscularly near the insertion of the deltoid. The dosage is one c.c. given weekly. In children less than one

year of age about half this dosage is sufficient. In a series of about three hundred thousand toxin-antitoxin injections in New York City the only harmful results noticed have been a temporary soreness and redness of the arm and in some cases a slight elevation of temperature. It has been noted by Park and Zingher that the redness of the arm following the toxin-antitoxin injection is identical with the redness in a positive Schick reaction. It has been noted also that in most children with a negative Schick reaction the injection of toxin-antitoxin does not cause the redness and swelling. This reaction would indicate therefore a susceptibility to the disease; in fact, some authorities now advocate the giving of all children one dose of toxin-antitoxin and if there is no subsequent local reaction considering the child immune, while if there is a red, sore arm the toxin-antitoxin treatment is to be continued. This injection, of course, would have to be made subcutaneously. The redness and soreness of the arm being practically the only objection offered by parents to toxin-antitoxin, it is advisable to give the injection deeply into the muscle, which, in about 98 per cent of the cases, eliminates all reaction. By means of the Schick test it has been determined that under three months of age fifteen per cent of the children are susceptible to diphtheria; three to six months, thirty per cent; six months to a year, sixty per cent; one to two years, sixty per cent; two to three years, sixty per cent; three to five years, forty per cent; five to ten years, thirty per cent; ten to twenty years, twenty-five per cent; twenty to forty years, eighteen per cent; and beyond forty years, twelve per cent. By this it is seen that the most susceptible age group is from six months to five years, or the pre-school age child.

It is therefore advisable to give to all children from six months to five years of age three doses of toxin-antitoxin without necessarily employing a preliminary Schick test. About four months following the date of the last injection these children should be Schick tested to

determine whether or not immunity has been obtained, it having been shown that about 15 per cent of the children receiving three doses of toxin-antitoxin do not obtain immunity; however, this refractory group if given a second series of three injections will in nearly every instance react negatively to the Schick test. The second most susceptible age group is the young school child from six years on up to twenty.

It is this group of children with which we have been working in Salisbury and Rowan County. We have this year Schick tested nearly three thousand children. About seventy-five per cent of this number showing a positive Schick test and received three doses of toxin-antitoxin. These children will be re-tested this year to determine the presence or absence of immunity. It is of course apparent to you that a campaign of this kind limited to school children can never hope to accomplish a great deal toward the eradication of diphtheria, since it is the child of the pre-school age that gives us our high morbidity and mortality from the disease. We, as Health Department workers, can never hope to accomplish a great deal with this all important pre-school age child and it is the purpose of this paper to plead with the family physicians to impress upon the minds of his patients the importance of having these children immunized by means of toxin-antitoxin. The diphtheria campaign in the schools will of course help greatly towards eradicating diphtheria by lessening the number of cases occurring in the school child with the resultant lessening in the number of smaller children exposed in the home. It will also establish in the minds of the parents the idea of having their children immunized against diphtheria. In other words, it paves the way for the family physician to immunize all children in the family. Where Health Department workers are immunizing the majority of the school children, the practicing physician can, if he will, completely eradicate diphtheria with the means which we now have at our disposal.

The Permanency of Immunity from Toxin-antitoxin—The question will probably arise as to why an immunity produced by toxin-antitoxin is permanent while immunity from antitoxin is very transient. It has been found that the antitoxin produced by the horse and injected into the human is not retained for any considerable length of time. On the other hand the immunity which is gotten from toxin-antitoxin is not a result of the toxin-antitoxin itself, but is due to the fact that the toxin stimulates the production within the body of the individual of antitoxin which product is retained and believed to be permanent. It has at least been shown by means of the Schick test that children immunized by means of toxin-antitoxin have remained immune over long periods of years. The New York City Health Department reports that in a series of three hundred thousand children immunized by toxin-antitoxin and reacting negatively to the Schick, there have been only seventeen cases of clinical diphtheria reported. It must be remembered that there are chances for an error in the Schick test which will be outlined in speaking of the test, and certainly in a series of three hundred thousand with the test being done and read by many different observers, there is every probability that as many as seventeen errors would creep in. In other words there can be no plausible excuse for any doctor refusing to employ toxin-antitoxin or the Schick test, since it has been demonstrated conclusively that it is perfectly safe and reliable procedure and will result, if employed extensively in your community, in a saving of many lives.

The Schick Test—The principle of the Schick reaction is simple. For a number of years we have used the skins of guinea pigs as an index of the neutralization of the standard dose of toxin by the antitoxin in testing the antitoxic potency of the serum of horses immunized against diphtheria toxin. If in a test the mixed toxin and antitoxin has an excess of toxin the skin of the guinea pig adjacent to it

becomes irritated. If there is an excess of antitoxin no inflammatory action results. In investigations on antitoxic immunity in man, blood was taken from children and adults and tested for antitoxin by the method just described. The idea occurred to Schick that instead of taking blood samples from human beings to determine whether they had natural or acquired antitoxin, it might be possible to introduce a tiny but definite amount of diphtheria toxin into the skin. If this toxin met in the skin fluids an amount of antitoxin sufficient to insure immunity, it would be neutralized and there would be no reaction, but if there were an insufficient amount of antitoxin the toxin would be held in the skin unneutralized with a resultant irritation of the skin just as was the case in the laboratory animal.

Hundreds of thousands of tests in the past years have proven beyond a doubt that Schick developed an accurate test for the presence or absence of diphtheria antitoxin in the body. It is evident that, if this test is to be employed, sufficient toxin must be injected to cause irritation if insufficient antitoxin is present. It is also equally important that an excessive amount should not be given, as in that case even an amount of antitoxin in the skin sufficient to insure protection against diphtheria would be insufficient to neutralize the over dose of toxin. The proper dose of the toxin in the Schick test is one-fortieth of the amount which would kill a guinea pig weighing two hundred and fifty grams. To carry out the test it is essential to have a good syringe with a short needle which must be sharp. A one-quarter inch needle with a one c.c. record syringe is the best. The injection is made in the skin of the forearm and great care must be taken in the injection. If the fine needle penetrates too deeply into the skin the fluid escapes into the subcutaneous tissue, is not retained and its proper action on the skin does not develop. As all of you who have seen the Schick test or have performed it know the sign of the correct injection is a raised small whitish area developing because of the entrance of the fluid into the skin. If

this is not done with the greatest of care errors in reading are bound to creep in. At the same time this is not a difficult injection and with a little practice four to five hundred an hour can be done with ease. When the dilution of the toxin with the salt solution has been made the fluid must be used within six hours, since deterioration sets in early, and, if an injection with this weakened toxin is made, naturally no reaction will occur. Many forms of glass also often cause the deterioration of diphtheria toxin. Failure to keep toxin on ice will also allow deterioration. At the present time the toxin put out by the New York City Health Department and that of the Gil-land Laboratories is reliable.

The Control of the Schick Test—Occasionally among older children and adults there is found a case in which a reaction similar to the Schick test follows the injection, but which is not due to the toxin but to the protein in the solution. This would put about five per cent of the positive reactions in doubt. To overcome this an injection exactly similar to the Schick injection is given on the other arm. This material injected is the same as that of the Schick test except that it has been heated. The heating destroys the toxin but leaves the protein unaltered. Thus it will be seen that if the reaction is due to the toxin the control test or the heated toxin gives no response but if due to the protein the reaction will appear. The Schick reactions are read "positive," "combined positive," "negative," "negative pseudo." The first two indicate a susceptibility to the disease, and the individuals so reacting are injected with toxin-anti-toxin, while the other two reactions indicate an immunity.

It is in the reading of the reaction of the Schick test that great care must be taken. A physician should no more attempt to remove tonsils or do surgery of any description without experience. A typical positive reaction begins on the second or third day and reaches its height about the fifth day. All of our readings are done on the seventh day. The reaction being an erythema at the site of injection which rapidly extends

over an area a half an inch or so in diameter. The border of this is usually sharply defined. In some cases this erythema is intense and the reaction assumes a violet reddish tinge. In other cases the light must be focused on the reaction in exactly the right way in order that it may be seen at all; and sometimes it is necessary to wash the arm with soap and water and sponge with alcohol in order for the reaction to be seen. These indefinite reactions are, however, typically positive, and call for active immunization by means of toxin-antitoxin. This erythema persists for several days, leaves a pigmented area followed by localized desquamation and disappearance.

In the simple negative reaction there is no appreciable result other than slight sign of the needle prick and the site of the inoculation. This usually has disappeared by the fourth day unless there has been extravasation of blood into the tissues. In the negative pseudo-reaction there rapidly develops following the injection an erythema which is apt to be much more extensive than the positive reaction. The depth of color is usually less than that which is seen in the positive reaction and the border is less sharply defined. This type of reaction usually disappears by the fourth day and leaves little if any desquamation or pigmentation. In the positive combined reaction there is a pseudo reaction superimposed upon the positive. It is in the interpretation of the negative pseudo-reaction and the positive combined reaction that the control test on the other arm is especially helpful. Schick test should not be read before the seventh day on account of the difficulty in distinguishing pseudo and true positive reaction. The pseudo-reaction usually has waned or entirely disappeared by the seventh day.

It is hardly necessary to state that all doubtful results should be interpreted as positive so far as the administration of toxin-antitoxin is concerned in reading a test negative it is also important to have in mind the possibility of a temporary immunity from recent injection of diphtheria antitoxin.

The Practical Application of the Schick Test—That the Schick test is reliable cannot be doubted or denied. Its reliability has been definitely determined. A Schick negative child cannot and will not develop diphtheria. The test is used for a two-fold purpose: first, to give a knowledge of security to those who develop a negative reaction, and second, to prevent the unnecessary administration of toxin-antitoxin. I have found also that a large number of people, previously dissenting, are willing to have their children take toxin-antitoxin after reacting positive to a Schick test. Also inasmuch as only about 85 per cent of the children develop an immunity from the three doses of toxin-antitoxin the Schick test is of value in determining whether more than three doses are necessary. It is of great value in many instances to know that a child is immune and for this reason alone the Schick test is worth while. For instance, a physician found that his wife had a mild diphtheria, his eighteen months old son had a negative Schick reaction. This settled the question as to whether or not to give the child antitoxin. The test is also of great value when an outbreak of diphtheria occurs in the schools or institutions in determining what children are susceptible. While it is a delicate test and must be done accurately and while the readings are difficult for one untrained, it is easily mastered and should be at the disposal of every practicing physician.

As I stated in the beginning my only hope and purpose in presenting the paper is to plead with the physicians not only to co-operate with Health Departments in their efforts to stamp out the disease, but to insist upon all children between the ages of six months and five years receiving the protective doses of toxin-antitoxin, since it is in this way, and this way alone, that diphtheria can be completely and finally eradicated. Although diphtheria is a disease of the cities and the fall and winter months, it may occur anywhere at any time unless the children have been immunized. Despite the more extended use of antitoxin one-fifth of the reported cases of

diphtheria under five years of age die. Beware of croup at this age. Unless sure that it is not diphtheria give antitoxin. The younger the child the less the reaction from toxin-antitoxin. The younger the child the more fatal is diphtheria. Giving toxin-antitoxin on the first birthday will save lives. The Schick test is not a necessary preliminary to giving toxin-antitoxin, as nearly all children under five years of age and a great majority of those between five and ten are susceptible. If it looks like diphtheria give antitoxin first and then take a culture. Five thousand units on the first day is better than fifty thousand on the third. Don't let a big number scare you. Five thousand units of antitoxin will not fill a dessert spoon. Carry a bottle of adrenalin solution when going to give antitoxin. It will not be needed except in the one hundred thousandth case but when needed there is no time to lose.

SOME SOURCES OF ERROR IN THE DIAGNOSIS OF PROTEIN SENSITIZATION.*

By Lucius G. Gage, B.A., M.D., Charlotte, N. C.

In the last decade the protein skin test has been used quite extensively to determine the causative agent in cases of suspected protein sensitization. At

first glance the procedure seems very simple. Scratch the skin, put on the protein, get a reaction, and send the patient away happy and well ever after. Unfortunately the diagnosis in these cases is not so simple a matter, but is beset with as many pitfalls as any other diagnosis. It takes the same amount of experience and acumen to make a diagnosis in this class of cases as it does in any other. As a result, many medical men have dabbled a little with the skin test, have failed to get satisfactory results, and have condemned the method as useless.

My object in writing this paper is to illustrate by report of certain cases the difficulties that arise in making a diagnosis, and is in no sense a treatise on protein disease.

Before proceeding to the report of cases, I submit below a tabulation of the series from which the reported cases are selected. This table includes all the cases that I have seen for the past four years. I believe that those for the last two years would show a much higher percentage of positives. When I started this work I thought, from reading reports and seeing the work of others, that I could rely on certain points in the history to give very definite information as to whether or not a protein was involved and the kind of protein in a given case. As a result I made a great many mistakes. Each case that I have had has taught me something. I will in

Numerical					Proteins reacted to								
Symptom	Cases	Pos.	Neg.	% Pos.	Dusts					Food			Bact.
					Pollen	Hair or Feath	Veg.	Grain	Meat	Egg—Milk	Fruit	Other	
Asthma	81	44	37	54	22	29	3	3	2	2	4	1	0
H. Fever	22	15	7	68	12	3							
Urticaria	12	2	10	16							2		
Total	115	61	54	53	34	32	3	3	2	2	6	1	0

Cases are classified under "Symptom" according to the leading symptom. A good many cases had more than one of these symptoms. One case had asthma, hay fever and eczema. This case is classified as asthma. No case is listed more than once though more than one protein may be listed for one case.

*Read before the Seventh District Medical Society meeting at Wadesboro, N. C., October 7, 1924.

this paper attempt to give you a few outstanding examples of the things to be learned in using the skin test.

Case Report

A. G., Charlotte, N. C., age 6, white, male.

August 29, 1922—Has been subject to wheezing spells since infancy. Was found sensitive to egg white six months ago. After excluding this article from diet he had no more trouble until ten days or two weeks ago. At this time (a little past the middle of August) he began to sneeze and snifle and in a few days developed asthma. He has had difficult breathing almost constantly since.

The skin test to common foods, epidermal proteins, and pollens is negative except for a two-plus reaction to egg white.

Sept. 8, 1922—Skin test repeated with same result. Patient continued to have asthma and his mother decided to take him to Baltimore. He had no more asthma after leaving Charlotte. The time of departure coincided with the onset of cold weather. After repeated skin tests in Baltimore a slightly positive reaction was obtained to a freshly made extract of ragweed pollen. The following spring the patient gave a positive reaction to one to one hundred solution of ragweed pollen. Desensitization during the past two years has helped the patient.

This case illustrates the fact that a patient may show symptoms from pollen sensitization before the skin gives a positive reaction. The time of onset, the symptoms and the time of subsidence all pointed to ragweed as the cause of the trouble, and the case was suspected to be a ragweed case. A positive skin test, however, could not be obtained by me during the first symptoms.

Case Report

The following case is interesting in comparison to the one that has just been reported as it is also a case of seasonal asthma which was also suspected of being due to pollen. It is different from the pollen cases, however, in certain respects which we will point out.

Mrs. S., age 39, white, married.

July 18, 1921—Asthma began five years ago and lasted until cold weather

set in and has recurred each year, sometimes coming on in August, sometimes in July. Exact dates are not remembered. Asthma usually keeps up past frost (until about Christmas). Any dust or musty smell will cause sneezing and tightness in chest at other times of the year. Was free from trouble one fall while living near the coast. Thinks that asthma is worse in changeable weather. Skin test tried with pollens and bacteria. Showed a one-plus reaction to corn pollen.

Patient was given twelve doses of corn pollen extract. Asthma was about as usual that fall, starting about August 20th. Tonsils were removed that fall.

Spring, 1922—Patient was tested with all available pollens, including some collected by me locally the previous fall. No reaction obtained except to corn pollen.

Sept. 17, 1923—Patient had little asthma in the fall of 1922, but had very persistent and severe case of dermatitis or eczema, which lasted about the same length of time that the asthma usually lasts. Has no eczema this fall, but is having asthma regularly now.

May 2, 1924—Patient says that she had asthma practically all last fall and was again tried on pollens without results. As an after-thought was tried on goose feather protein, which gave a four plus reaction. Advised to get rid of feather pillows and give house a thorough cleaning.

Sept. 25, 1924—Has had no asthma this fall except for two nights. On those nights, she was using a quilt that had been on the bed with her feather pillows. After two nights of asthma she removed this quilt and has been entirely free from trouble since.

This case from the history of seasonal asthma was presumed to be due to pollens. There is now very strong evidence that it is due to a protein to which she was exposed all the time, but which produced symptoms chiefly in the fall. The case is different from a pollen case in that the symptoms did not subside on the appearance of frost, but kept up until definitely cold weather set in. The corn pollen reaction was thrown out be-

cause I have since found out that every one reacts to corn pollen and as it is a heavy pollen it does not cause trouble except when one comes in direct contact with it.

Case Report

The object in reporting this case is to bring out the point that all protein preparations are not reliable for the skin test, and show how much can be done to a patient without benefit, when the protein cause of the disorder is overlooked. **Miss K. D., age 44, stenographer, white.**

March 18, 1922—Complaint asthma, perennial, duration 30 years. Usually worse at menstrual time. Always has asthma when she has a cold. Usually has no symptoms of rhinitis or bronchitis with the ordinary attack. Has had tonsils removed on account of asthma. Has had numerous courses of respiratory vaccine for the same trouble. For the past three months she has had asthma every night.

Physical—Well nourished, looks younger than age stated. Pulse 66, blood pressure 190-95. Throat red, tonsils cleanly removed. Teeth suspicious. Sinuses negative. Aortic second accentuated. Emphysema, no rales. Skin test including foods, dusts, and bacteria are negative. W. B. C. 8,000. Urine negative.

March 19, 1922—Sputum Cultured and vaccine made.

May 24, 1922—Second skin test negative. Basal metabolism normal.

June 12, 1922—Vaccine discontinued, no improvement from its use.

May 24, 1922—Basal metabolism normal.

June 30, 1922—Patient has been away for two weeks and was free from asthma while away.

July 22, 1922—Skin test tried with an extract made from dust from patient's room. No reaction.

July 31, 1922—Patient, on advice, has had an operation to relieve some pressure in the left nostril, but has received no benefit from the operation.

October 17, 1922—Vaccine prepared from nasal culture.

November 27, 1922—No benefit from vaccine.

January 7, 1923—Has had an attack of broncho-pneumonia. Was free from asthma for three weeks after pneumonia.

April 7, 1923—Two abscessed teeth extracted.

April 11, 1923—Patient continues to have nightly attacks of asthma, and is now well into the second year of my treatment without result.

April 30, 1923—Another skin test tried. In this test the patient gave a distinct reaction to goose feathers.

May 7, 1923—Had an attack of asthma lasting two days after the last skin test.

May 31, 1923—Has had another attack of bronchitis with some asthma.

June 5, 1923—Has had no asthma since bronchitis.

September 16, 1923—Has had no asthma except when she is occasionally brought in proximity to feathers. When this happens she always wheezes up.

I had this case under my care over a year before I got a skin reaction that disclosed the source of the trouble. In the meantime I tried everything I had heard of, including a great many drugs that I have not mentioned in this report, with absolutely no benefit. The reason that I did not get a reaction sooner was because I was using, unknowingly, a preparation of goose feather protein that was absolutely inert for production of a skin reaction. The test that told the tale was done with a new preparation.

It is absolutely essential in doing the skin test to know that the protein preparations with which one is dealing are active. There is usually more difficulty in obtaining active preparations of hair and feathers than of foods and pollens, because the proteins of the former substances are more difficult to prepare. I have received three different specimens of feather protein which did not react on known cases of feather sensitization.

Case Report

The next case is interesting and instructive because, although the history points clearly to protein disease, the skin test is negative with protein preparations known to be active because they have given positive tests with other cases. The question is: Is this lack of response due to relatively poor proteins? That is, will the preparation cause a reaction on a strongly reacting skin and not on a weakly reacting skin, or is it due to a condition wherein sensitization of the respiratory mucous membranes is not accompanied by sensitization of the skin?

Mr. T. A. N., age 41, white, male, furniture dealer.

August 7, 1924—Complains that when he lies down he feels like there is something in his nasopharynx that ought to be gotten rid of, and he begins to clear his throat and cough. Later in the night this usually causes some difficulty in breathing. He has for some time been taking adrenalin. Was operated on for chronic sinus disease in April, 1923. Following his operation he was free from his present symptoms for about one year. He has now no sinus infection. He has no trouble during the day.

Several years ago he bought a pony which was shipped to him by freight. He went to the station to unload the pony and immediately upon sticking his head in the car where the pony was, he was seized with a violent attack of asthma.

He has been sleeping on a feather bed all winter. It was removed from his bed about two weeks ago, and he has been somewhat better since. On occasional trips away from home, he has been better than he is at home.

The skin test is negative entirely so far as a clear cut reaction is concerned. The test included feathers and horse dander and about thirty other articles. In view of the history he was advised to arrange things so as to avoid animal dust.

A letter from this patient on September 9th, 1924, in answer to an inquiry

about his condition makes the simple statement: "I am glad to tell you that I have gotten right much better since seeing you." This is all that the patient says about his present condition. I do not know how thoroughly he has followed out instructions.

Case Report

The final case is interesting because its protein origin might so easily be overlooked. In such a case the secondary symptoms, in this case cough and bronchitis, may overshadow the symptoms of protein sensitization, such as asthma. In fact in obtaining the history of this case difficult breathing was not mentioned by the parents until the child had been examined and the specific question asked.

R. B. G., Jr., white, male, age ten.

July 16, 1924—Brought in for chest examination to see if he is in condition to have tonsils removed to relieve chronic cough. Has been subject to this cough since infancy. He is quite disabled by the cough. He cannot run and play without producing a paroxysm of coughing. At times there is some difficult breathing after severe coughing spells at night. Had whooping cough a year ago and parents were told to expect cough for a long time. At the age of twelve months he had severe eczema. Sneezes a great deal. Grandfather is asthmatic.

Patient is a pale stoop-shouldered undernourished child, small for his age. Eyes are red and watery. There is an explosive, unproductive, expiratory cough. Numerous rales in chest, fine and coarse, rather dry in character and heard both upon inspiration and expiration.

Skin test yields a two plus reaction to goose feathers. Has been sleeping upon a feather bed all winter.

Parents were told to get rid of feathers in child's room and report in ten days. At the end of this time the cough had stopped entirely. Patient is able to run and play without coughing or getting out of breath. General appearance has improved. Rales have disappeared from chest except for an oc-

casional small squeak. Patient is considered to be in good enough condition to have tonsils removed. The tonsils are not being removed, however, with the idea of curing a cough, but for the improvement of the general condition of the child.

Summary.

The object of this paper is to bring to your attention certain interesting cases of protein disease illustrating some of the difficulties that arise in the management of these cases.

Five cases have been reported taken from a series of 115 cases presenting symptoms of probable protein disease illustrating the following points:

1. A protein cause may give rise to symptoms before the skin test is positive and the skin test become positive at a later date.

2. Cases that appear to be seasonal asthma are not necessarily due to pollen, but may be due to a perennial protein cause which under certain climatic conditions gives rise to symptoms.

3. A case of protein disease may be overlooked by reason of an inert preparation of protein being used in the skin test. Non-specific treatment of the case reported was a failure. Specific control in this case was a marked success.

4. It is possible that certain individuals may be sensitive to a protein and not give a skin reaction with proteins of known potency.

5. Secondary symptoms may so mask the symptoms of protein disease that the case may not be regarded as one of possible protein disease.

matory process is characteristically chronic although it may for a time present symptoms of considerable activity with slight temperature elevation. It exhibits itself chiefly in children between infancy and adolescence, but occurs also in adult life, attacking one or a few nodes, more often of one side only, which are at first noticeable as distinct, slightly tender, freely movable nodules. Although at any time the inflammation may subside entirely, the nodes becoming fibrotic or even calcareous, as a rule it progresses slowly and painlessly, extending to other adjacent nodes with periods of activity interrupted by long or short intervals of apparent quiescence, until an entire group has become enlarged, adherent, or more or less bound together by connective tissue. If untreated, fully half of such conditions terminate in the typical coagulation necrosis of tubercle, suppuration ensues and the product discharges through the adherent and eroded overlying skin. Sinuses thus established are of a chronic type, healing with difficulty, if at all, and produce disfiguring scars. *Bacillus tuberculosis* is frequently absent from the purulent exudate which, however, is often pathogenic for experimental animals, and secondary infection of the sinuses by pus-producing organisms of the skin surface occurs as a rule and may produce symptoms of local or more general sepsis. Death, which rarely occurs otherwise, may result from this or from the implantation of pyogenic organisms or tubercle bacilli in other organs, from the amyloid degeneration of these organs, or from sheer exhaustion.

Diagnosis.

The diagnosis of tuberculous adenitis of the neck is usually not difficult, although in some instances it is impossible, and cannot be positively made until one of the glands is submitted to microscopic study. A common source of confusion is found in cases of lymphatic enlargements in the neck secondary to pyogenic or non-tuberculous infections in the mouth, naso-pharynx or about the teeth. Acute abscesses in the

TUBERCULOSIS GLANDS OF THE NECK.

By Jas. W. Gibbon, M.D., Charlotte, N. C.

Of the superficial lymph-nodes, those most usually involved with tuberculous disease are the cervical. The submaxillary and the deep cervical groups are most frequently affected and the inflam-

neck of children are often not due to tuberculous infection. To establish the diagnosis, then, it is always important to exclude the mouth, teeth and nasopharynx as concealing foci of pyogenic infection. The differentiation between this simple and common hyperplastic adenitis, due to a non-tuberculous infection and the glandular hypertrophies due to the tubercle bacillus is at once the most necessary and the most difficult. Simple hyperplastic adenitis readily clears up upon the finding and eradication of the primary focus. Whereas in cases of glandular enlargement due to the Hodgkin's Disease, and Lymphosarcoma, the treatment is the same as that of tuberculous adenitis, and the differential diagnosis, while often quite difficult, is not so exceedingly necessary. In tuberculous cases the infection usually makes its entrance through the tonsils, and the first glands enlarged are those in front of the sternocleidomastoid muscle at the angle of the jaw. Glandular enlargements due to Hodgkin's Disease are usually more discrete than those due to tuberculosis, in which the glands always become matted together by adhesions in a continuous chain. In lymphosarcoma the glandular hypertrophy is more rapid and without any inflammatory reaction.

Treatment.

In regard to the treatment of tuberculous glands of the neck, there may be some differences of opinion as to the method affording the best results, but no one will argue against the prevailing idea that these glands must be completely and thoroughly eradicated in order to prevent the ultimate dissemination of tuberculosis from these foci to other organs and tissues of the body. Whatever the treatment followed, it should be begun early, be vigorous and adequate in order to protect the health and possibly preserve the life of the patient. Surely that method should be employed which more thoroughly eradicates the disease, substantiated by the ultimate percentage of cases cured. There should be no other basis for the

selection of the method of treatment than by the late results and number of cases cured. Theoretically, and on paper, all methods seem plausible, but the question is how many will bear the test of marshalling the facts obtained from the study of the late results of the cases treated.

It is the belief and the experience of many men that conservative plan treatment instituted early will give good results in certain cases. This plan embraces measures for simply regulating the hygienic routine of the patient's life, with the addition of a few simple tonics or alteratives. More fresh air and sunshine is emphasized. Proper food, and dietary care is important, and the one drug, syrup of hydriodic acid, as an alterative, will benefit many cases. One surgeon of note remarks: "I have seen the glands in cases in which a radical operation seemed indicated, gradually recover by these measures." Certainly in the early and selected cases the plan has much to commend its use, particularly when the patient can be kept under observation and can afford it.

The use of tuberculin still is considered good treatment in some quarters. For instance Waters in Tice's Practice of Medicine of recent date states, "Probably in no form of tuberculosis is tuberculin so valuable and so sure in its beneficial effects." But it is further stated that the cases must be properly selected and the tuberculin administered carefully by an expert.

The roentgenologist is no less enthusiastic, and remarkable claims of cures are published. For instance Russel Boggs makes the statement that "The X-rays will cure over 90 per cent. of the cases." There are, however, few surgeons who accept so sanguine a prognosis by this method of treatment, and their refusal is based largely on the necessity of operating on cases which have not been cured by X-ray. Japson of Philadelphia states that in his experience X-ray treatment has been disappointing. C. N. Dowd of New York City, the country's leading authority on this subject, gives his opinion in these

words: "As to the treatment of tuberculous cervical lymph-nodes, I believe very strongly in surgery, and regret that the subject of recent years has been so much befuddled by statements which show only one side of the subject. I know of no place in the human body where tuberculosis offers so good a prospect of permanent cure as in neck infections. Operations are wonderfully satisfactory in children. As they used to come to me at St. Mary's Hospital, we could confidently expect a cure by one operation in about 85 per cent. of the cases, and in a large portion of the remainder a cure followed a secondary operation. These cases were followed through many years, some of them as many as twenty.

"If the disease is permitted to run into adult life and involves very extensively not only both sides of the neck but also other parts of the body, the results of operation are less favorable. Even in the adult cases surgery is probably the most efficient method. It may be followed by some form of radiation, if necessary.

"The whole subject has suffered from the types of operation which have been common. The opening of an abscess or a little curetting have often been called operation, whereas they do not represent proper surgical treatment of the disease. A thorough operation in a child with moderate involvement of the cervical lymphatics of one side can be done in one-half or three-quarters of an hour. The mortality rate is almost nil. The scar is hardly to be found, but the dissection should be carried so as to include the groups of glands which are centered about the upper part of the internal jugular vein and they should be cleanly removed.

"In adults the operation has been done even less thoroughly, and a vast number of partial excisions have been resorted to. There is no reason to expect that these partial excisions would be curative. The operation is tedious, requires a very accurate anatomic knowledge, and is generally avoided by the busy surgeons who are in charge of the large hospital services. They are very

willing to turn them over to the younger men or refer the patients to any form of treatment which offers a fair prospect of success. It is particularly unfortunate that in doing this they have condemned many children to forms of treatment which offer little prospect of satisfactory cure."

While surgical treatment does have much to recommend it as the method of choice in treating these cases, it not infrequently yields some disappointed results, recurrences of the disease take place and the cosmetic results of the operation are very disappointing. The operative treatment in the past has suffered much because it has not been properly or effectively carried out, as already mentioned. However with our present understanding of the pathology of tuberculous adenitis, with more carefully planned incisions and a thoughtful consideration of the cosmetic aims, the surgical treatment ought to be more universal than it has been of recent years.

Now as regards the technique of modern surgical treatment of lymphatic tuberculosis in the neck, the ideal is a combination of complete and thorough removal of the diseased glands and a good cosmetic result. The scar should be a thin white one. The incision should be made so as to follow the natural creases of the neck and should therefore be curved. This incision has a great advantage over the old type of incision which followed the margin of the sternocleidomastoid muscle, in that it does not undergo stretching, and hypertrophy and leave a disfiguring scar so frequently as the latter incision. The advantages of making the incision in the direction of the skin fibers, therefore, was first pointed out by Kocher many years ago. In the upper posterior triangle an additional oblique incision within the hair line may be used. Any sinus, or thin, ulcerated, poorly nourished skin is included in the incision, and excised.

If there is an underlying abscess it is thus exposed above the deep fascia. This is cleared away with sponge and curette. If stopped at this point, the

operation would constitute the so-called "Currettement," which is a failure, and has contributed largely to the gloomy outlook still entertained in some minds as to the prognosis of tuberculous adenitis, and the results of surgical treatment. The conservative factor has thus far not been reached. If, after clearing away the debris of the abscess, one examines carefully, a sinus will be found perforating the deep fascia and communicating with a large gland beneath the upper portion of the sternocleidomastoid muscle. Removal of this, and the neighboring, but still firm members of the chain, is the next most important step.

A knowledge of the deep structures of the neck is necessary for this dissection, and often the operation rather one of time, care and patience than brilliance of technique. These structures are exposed after the division of the deep fascia. The dissection invariably uncovers the internal jugular vein, to which the infiltrated glands are more or less intimately attached. Wounds of the short branches produce active hemorrhage and should be quickly controlled. Wounds in the vein itself may require lateral ligature, suture or ligation. Ligation has been done a number of times without mishap. Jopson in a large series of cases has had only one fatality from a secondary hemorrhage; Dowd in a larger series also one.

The spinal accessory nerve should be looked for, identified and protected, both before and after it perforates the sternocleidomastoid muscle. In high dissections beneath the jaw, it is a good plan to avoid separating the platysma and the deep fascia, and to make the incision through these structures below the line of incision through the skin. By this means division of the branches of the facial nerve, which drop into the neck below and parallel to the mandible, and then run upward to supply the Depressor Labii Inferioris is avoided. In many cases paralysis of this muscle following injury to these nerves will fortunately clear up. As result of the division of some of the superficial branches of the cervical plexus tempo-

rary anesthesia may follow, but this will also soon disappear.

Blunt dissections, careful inspection of all suspicious structures before division, and the plan of working away from danger are helpful factors. The vein is carefully cleared of all infected glands and both triangles of the neck may be uncovered. The anterior belly of the Omohyoid crossing the anterior triangle is a landmark. The removal of the tonsils at the same time is ill-advised, and if not removed beforehand, should be at a later date. This, however, should not be delayed long as secondary invasion of fresh groups of glands has been observed due to failure to remove the tonsils in time. Drainage is usually necessary for three or four days on account of capillary oozing following so extensive a dissection. The patients are usually out of bed from two to four days.

My personal operative experience comprises a consecutive series of twelve cases, not large, but a sufficient number to impress me with certain features of the disease. One-half of these cases was comprised of negroes. The oldest case was a colored woman of 65, who presented herself because of a mass of long duration above the clavicle. A diagnosis of tuberculosis was not made until a microscopic section had been examined. Another negro, a male of 45 years, I thought had Hodgkin's Disease, and under that impression removed the glands of both sides of the neck, only to find under the microscope that they were tuberculous. In another case, the operation was secondary for recurrence following a dissection by another surgeon. The youngest case of this series was 9 years. The end results in these cases have been satisfactory. The scars have been fine and linear and no recurrences have taken place.

REPORTING CASES OF AN INFREQUENT TYPE OF FOOT DEFORMITY.

By O. L. Miller, M.D., Charlotte, N. C.

Hereditary Muscular Atrophy of Peroneal Type (Charcot-Marie-Tooth Type): "This form of the affection is hereditary or familial in character, begins in childhood and usually attacks the muscles of the leg first, especially the peronei muscles, the result of which is an equino varus. The hands and forearms are occasionally involved in a similar process. Walking becomes difficult on account of the malposition of the foot and the diagnosis is not easy, because children without this disease occasionally develop a pes cavus running into a mild equino varus without known cause. Cramps may occur in the muscles and fibrillation is not infrequent. The tendon reflexes are usually lost but sensation is not greatly disturbed although feelings of numbness may be noticed by the patient.

The deformity of equino varus due to muscular atrophy of this type is well marked, rather rigid and the legs are small but there is no one diagnostic criterion.

Plastic tenotomy of the tendo achilles is desirable and followed by improved walking for some years. Muscular development of the atrophied muscles should be attempted by exercises, and is often useful. Prevention of the deformity should be attempted by supporting the feet at right angles to the legs to minimize the drag on the anterior muscles."

The foregoing extract from Jones and Lovett's *Orthopedic Surgery*, describes the clinical picture of a specific but rather infrequent type of paralysis, or pseudo-paralysis, its consequent deformity, and its usual course and treatment.

During the past year it has been my privilege to see four distinct cases of this disease. At first not being familiar with, nor on the lookout for this condi-

tion under its classical name, we were inclined to call it some atypical type of infantile paralysis. However, in the classification of deformities from infantile paralysis one instinctively feels that this picture is too symmetrical in involvement to be the latter disease.

Clinical Cases.

Case No. 1, A. S.—Age 17, farmer boy.

Family History—Father and mother living and well. Two brothers and two sisters living and well.

Past History—Normal at birth, breast fed, grew and thrived. At ten years of age he blinded himself with scissors. Following this his lower extremities became weak and his feet deformed. He walks now with difficulty, because of inability to balance on feet.

Pres. Ill—This boy is presented to the clinic for the treatment of the deformity of the feet. (Note—The appearance of these feet would lead one to feel that it could have been an infantile paralysis affair; but its bilateral appearance, the vague history, etc., leads one to feel that it is possibly an extremity



Case I. A. S. Before and after operative treatment of feet.

evidence of a central nervous system lesion.)

Orth. Phys—Boy has curved shoulders and a generally ugly posture. His upper extremities are well developed. He has good use of his arms and hands. **Spine**—Exaggerated dorsal curve. Poor posture. **Lower Extremities**—Thighs are well developed and about equal in size. Some atrophy below the knees. There is an outward torsion of both tibiae. Both feet are paralytic club feet. Heel cords rather short, tarsus rocking outward, with hypertrophy on the outer aspect, right most marked; cavus and hammer toe, great toes.

Procedure for Treatment—If the child proves physically well enough, turn the tibiae, do plastic stabilizations on both feet.

June 14, 1923—Operation—Heel cord tenotomy, plantar fasciotomy, right foot stabilized.

June 15, 1923—Operation—Plantar fasciotomy, heel cord tenotomy, left foot stabilized.

June 17, 1923—Manipulation—Both feet. Some improvement in alignment gained.

Sept. 4, 1923—Casts removed. To have massage, exercises and shoes.

Nov. 6, 1923—Reports to clinic for observation. Feet holding correction. Gait much improved. Return in one year. (Whether in this case the blindness is a part of the picture of the disease or whether it really is the result of an accident we are not able to say. The family dates the blindness from an accident.)

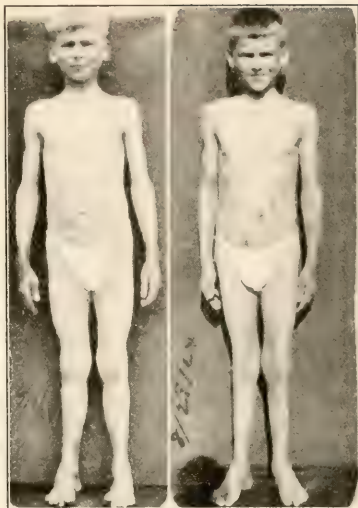
Case No. 2—C. B. Age 12.

Family History—Father and mother living and well. One sister living and well. One sister paralyzed from waist down, age 14. Three brothers living and well. One sister dead, diphtheria and pneumonia.

Past History—Normal delivery, breast fed, grew and thrived. At ten years of age parents noticed that child's feet were not normal. Seen at clinic and advised to file an application for admission to hospital.

June 10, 1924—Admitted to hospital.

Orth. Phys—Upper Extremities—



Case II. C. B. Before and after operative treatment of feet.

Very well developed, good function, slightly prominent scapulae. **Spine**—No curvature. **Lower Extremities**—Thighs very well and equally developed. No flexion deformity of the hips or knees. Some atrophy of both calves. Both feet are deformed in a very similar way. Moderately contracted heel cords with each foot in cavus, and forefoot in varus deformity. Great toes hyperextended. Hypertrophy of the outer aspect of the medio-tarsus.

Procedure for Treatment—Heel cord tenotomy, club-foot type foot stabilization, plantar fasciotomy, manipulation.

June 13, 1924—Operation—Heel cord tenotomy, plantar fasciotomy, club-foot type, foot stabilization, right.

July 11, 1924—Operation—Left, heel cord tenotomy, plantar fasciotomy, club-foot type of stabilization, transplantation of the anterior tibial tendon into the centre of the tarsus.

Aug. 16, 1924—Manipulation—Both feet.

Aug. 29, 1924—Lift on outer border heel of right shoe. Child is walking

quite well. Dismissed home for a month.

Oct. 1, 1924—Reports to out patient clinic. Feet well balanced and functionally competent.

Summary.

This report is offered to call to mind this type of foot deformity as a distinct entity differing from infantile paralysis to a considerable degree though simulating this disease in its foot picture.

Only two of the four cases seen are reported here in detail.

In the history of these cases we were not able to trace any consistent hereditary factor.

The above authors mention the operative treatment as consisting of plastic tenotomies. In our experience the feet reach their maximum improvement, both in appearance and function, by having subastragaloid arthrodeses, foot stabilizations, in addition to any necessary plastic tenotomies.

REPORT OF AN UNUSUAL CASE OF TETANUS.*

By Dr. J. P. Munroe and Dr. E. J. Wannamaker, Jr.

Tetanus is caused by the tetanus bacillus which produces one of the most virulent toxins known. It is usually seen and considered only as a disease of acute onset and rapid development. This case is interesting from the aspect of an unusually prolonged and insidious onset, and secondly, because of the alarming reaction resulting from the treatment with the serum. The bacillus is introduced into the system through a wound of some kind. A punctured wound is considered most likely to carry and hold the infection. The germ is present in garden soils, stable manure, and even refuse from human beings. There are cases of so-called idiopathic tetanus in which the point of entrance into the system is not known. It may be a

scratch about the nail, on the foot, or other exposed part of the body. Recent investigations have shown that it may also be some abrasion in the gastro-intestinal tract. For instance, operation for hemorrhoids has furnished a point of entrance. It was found by Kitasato and others that the bacillus is a frequent inhabitant of the gastro-intestinal tract. Out of seventy-eight Chinamen examined, 1-3 were found to carry the germs. Further experiments proved that the majority of these had developed in the blood antibodies which seemed to protect them against the disease. These experiments throw some light on the cases reported as following typhoid fever and dysentery.

Pathologically, tetanus is either one of two types. First, the ascending or local type in which case the toxins make their way directly to the cord causing involvement of the muscles of the wounded extremity which may or may not be followed later by general symptoms. Second, the descending or general form which is the more common. Here the involvement of the central nervous system brings about, first of all, symptoms in the muscles of the jaw and back of neck followed by more or less extensive involvement of the rest of the body. We should keep in mind the two types and the possibility of occasional cases with slow and insidious onset as the one given below. The all important thing in the treatment of tetanus is early diagnosis and immediate commencement of treatment with serum antitoxin, for it is recognized that if a fatal amount of toxin has already been absorbed by the nerve cells, no amount of antitoxin can save the patient's life. The antitoxin acts simply by neutralizing the toxins being formed, and that are already circulating in the blood stream.

Case: Mrs. H. H. S., white woman of 50 years, entered the hospital on August 6, 1924, complaining of stiffness of muscles of the neck and mouth. She gave a history of having been scratched by a rooster's spur some three months previously. This promptly healed and she emphatically denied any further in-

*Read before the Seventh District Medical Society meeting at Wadesboro, N. C., October 7th, 1924.

jury except slight burns about hands and arms at times when cooking.

On July 17, 1924, patient first noted stiffness in back of neck being called to her attention by an inability to arrange her head comfortably on the pillow at night. The stiffness was constant and increased in severity extending around to the muscles in front of the neck and later to those of the face and pharynx. It was not until the latter symptoms were developing—one week after onset (July 24th) that she consulted a physician. Stiffness gradually extended to muscles of the back and on July 27th slight abdominal rigidity was first noted by patient. On August 1st or 2nd, she noted that her limbs were becoming stiffened at times, with a tendency to extension. On admission to hospital August 6, 1924, she occasionally felt a spasmodic contraction of all affected parts which was accompanied by considerable pain. Also at this time she occasionally strangled in attempting to swallow. The remaining history, including past medical and family history is unimportant.

Physical examination showed a fairly well developed, but poorly nourished adult white woman of about 50; not toxic, cyanotic, or jaundiced; skin moist and warm, no rash; temperature, pulse, and respiration normal; blood pressure 125/80; facial expression showed definite risus sardonicus; head was drawn backward though no muscle spasms were observed; pupils were equal, regular, reacted normally to light and accommodation, no extraocular palsies; nose and ears negative; upper teeth had been removed, lower in poor condition; mouth could not be opened more than half-way; pharynx not seen; neck showed moderate rigidity; heart and lungs were normal; abdomen showed slight rigidity at times, though not constantly and was otherwise negative; extremities normal in size and shape; reflexes extremely exaggerated, and, on eliciting patellar reflexes, there were three or four repeated contractions. Blood picture and urinalysis normal; spinal fluid: cell count—0, globulin not increased; Wassermann reaction, negative.

Diagnosis: Tetanus is to be differentiated from strychnia poisoning, hysteria, and meningitis. There was no difficulty in excluding strychnia poisoning in this case because symptoms of strychnia poisoning come on rapidly and are apt to progress to general convulsions, and there are periods of complete relaxation between the attacks of rigidity. Hysteria is excluded by the whole history of the case. There were no emotional manifestations, no periods of complete relaxation as would be expected in hysteria. Chronic meningitis is differentiated by the examination of the spinal fluid. In meningitis, you would expect increased spinal pressure, an increased cell count, and the presence of bacteria. In this case the spinal fluid was perfectly clear, a normal cell count, and normal pressure. We had no hesitation, therefore, in the presence of constant rigidity, and risus sardonicus to make a diagnosis of tetanus.

If it be objected that the only injury mentioned in the history was a scratch by a rooster's spur 3 months previously, longer than usual for incubation, the answer may be that the spores of the bacillus may lie dormant in the tissues for an indefinite time before being stimulated to activity. Furthermore, it may be that some wound other than this was the point of entrance for the germ.

The patient was first given a small subcutaneous injection of serum as a safeguard against anaphylactic reaction. Then, 10,000 units were given intravenously. A slight temperature reaction followed. The next day 10,000 units were given intraspinaly after first withdrawing the proper amount of spinal fluid. There was no immediate reaction, but within the next 12 to 15 hours, the patient passed from a lethargic to a comatose condition, and, whereas there had previously been only slight stiffness of the neck, there was extreme rigidity of the neck and back—the case resembling at this time one of severe meningitis. Temperature was 102.2 degrees. A lumbar puncture was done and the fluid, which had previously been clear and under normal pressure, was under slightly increased pressure and the ap-

pearance was almost milky and very heavily loaded with white blood cells. The condition was correctly assumed to be due to the serum reaction, several similar cases having been reported; but the symptoms were so ominous that as a precaution, several smears were stained for organisms, but none were found. The following day, the patient was greatly improved though still stuporous and on the third day after spinal injection she was mentally perfectly normal.

Because of the severe reaction and slow onset of the case, further treatment was postponed, and, as improvement was thereafter progressive, no additional serum was given. On August 16th patient was allowed to walk about the hospital, and a few days later she was discharged as cured.

SURGICAL RECONSTRUCTION OF THE BILIARY PASSAGES.

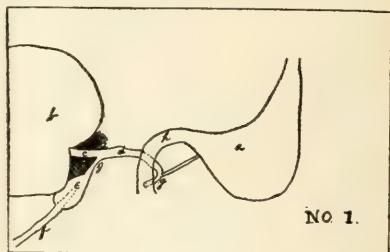
By E. M. Robinson, Birmingham, Ala.

In the discussion today our remarks will be confined for the most part to the operation of connecting the gall bladder or the common duct with some portion of the alimentary canal, as the jejunum, the duodenum, the stomach or even the colon. Operations upon the gall bladder other than for drainage into the gut where an obstruction exists in the common duct will not be considered. Owing to the mobility of the intestinal tract and to the fact that the gall bladder or the common duct may be anastomosed to almost any portion of the gastro-intestinal tract, including the stomach and even to the colon with very little disturbance as to function, the surgeon is enabled to do cholecysto-jejunostomy, cholecysto-duodenostomy, cholecysto-pylorostomy, cholecysto-gastrostomy or cholecysto-ileostomy, named in the order of preference.

It is necessary that the loop selected

shall be sufficiently movable that there will be no traction, and that there shall be no acute angling of the gut, (Fig. 2) which would cause blocking of the free-passage of intestinal contents, thereby avoiding a fistula. This occurred in one of our cases and will be referred to later.

The connection is made by anastomosing the intestine to some portion of the gall bladder or to the duct either by suture or by a small Murphy button. This is done in exactly the same manner as an entero-enterostomy is done. In one of our cases where a small button was used it did not pass for several weeks after the patient had gone home.



Simple Cholecystectomy.

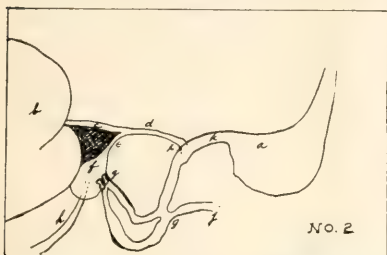
If in our judgment the obstruction in the duct is only temporary and will be overcome by draining the gall bladder, or if for any reason the operation should not be prolonged, we simply do a cholecystomy. (Fig. 1). We may do anastomosis later, or we may feed the patient on his own bile almost indefinitely, when nature will relieve the cause, especially when this is a pancreatitis or a swelling around the common and pancreatic ducts.

The bile is thus saved to the patient and bridges him over a temporary obstruction until such time as nature may restore the duct to its proper function, when the external drainage will cease of its own accord. It will not stop until there is free passage through the duct into the gut, and it cannot be kept open after proper drainage has been established, provided it has been fastened to the peritoneum and not to the fascia or skin. The indications for draining the gall bladder into the gastrointestinal

tract are any obstruction which prevents the passage of bile into the gut by its natural channel, which cannot be removed. If the obstruction is in the cystic or hypatic duct it would be unwise to do a cholecysto-enterostomy. We have had recently more than our share of gall bladder and gall duct diseases of unusual severity, and many of these cases have been in old people, some of them

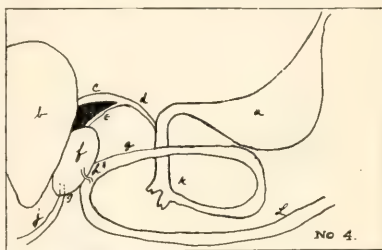
appendix.

In no other pathology does nature put forth a greater effort to bring restoration of function than it does in gall bladder and duct diseases. It is no uncommon thing to find at operation that there has been a connection made between the gall bladder and the cystic or the common duct to some portion of the intestine, thus establishing a drainage. Under such circumstances there has been an inflammation caused by the projection of an angle of a stone, a loop of the intestine has become adherent to this spot, necrosis of the wall of both the duct and intestine enables the stone to pass and drainage is brought about. In fact, this is the only way that it is possible for gall stones to be passed from the gall bladder. In one instance at operation we found the stone in process of passing through the walls of both the gall bladder and intestine where they had become adherent. Another patient was admitted to the hospital suffering from an intestinal obstruction of six

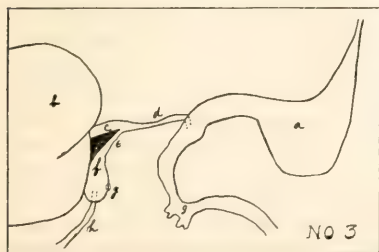


Chlecystectomy cholecysto-jejunostomy and entero-enterostomy to overcome an intestinal obstruction caused by angulation at point of anastomosis (g).

beyond 80 years. Old people stand operation better than we have thought; and especially since we are able to do these operations under local anesthesia without pain, we are able to operate upon them with comparative safety and with a probability of satisfactory results in many of them, which would otherwise be hopeless. The nerve supply is easily located in the upper right quadrant and we know pretty well where the gall bladder can be found and it does not require a search as in the case of some abdominal operations such as removal of the



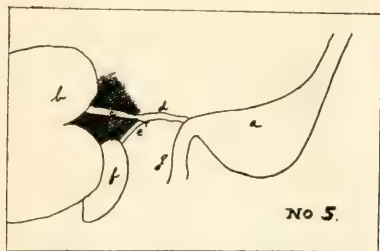
Same as No. 3 with the chloecyst-enterostomy re-established by means of a rubber tube.



The cholest-enterostomy had given way. The buttonhole has been closed (g) and the loop resected (i).

days standing. A history of three previous obstructions lasting from five to six days was elicited, the first one dating from fifteen years back. She was operated upon as soon as preparation could be made, and when the abdomen was opened a mass was found the size and shape of an egg, located at the lower end of an enormous distention involving the proximal of intestine. The intestine was collapsed below this point. An incision was made parallel with the long axis of the intestine, the stone was removed and the opening closed. This is

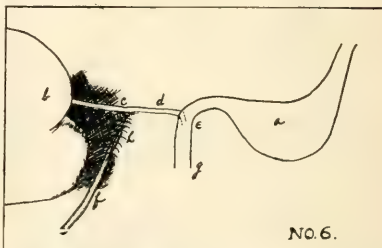
what had happened in this case: There had been an acute cholecystitis while this stone occupied the gall bladder; adhesions had formed between the gall bladder and a loop of the intestine just beyond the jejunum; necrosis had occurred from the pressure of the pointed end of the stone allowing it to pass through the gut. This was verified by exploration. The union which had occurred between the gall bladder and gut was surrounded by a mass of well organized fibrous tissue. The size of the stone prevented its unobstructed passage through into the colon. This caused an obstruction which was relieved by dilatation of the intestinal wall immediately surrounding the stone. Another obstruction would occur which would in five or six days be overcome. This would give relief and for some cause the stone would be again pressed down into the smaller gut. This had been repeated four times with recovery following and the chances are about even



Preparatory to removing the gall-bladder, a ligature has been placed around the cystic duct where it joins the common duct.

that relief would have been brought about again had the operation not been resorted to. One of our recent patients was admitted in a desperate condition, suffering great pain. One grain of morphine was given without obtaining entire relief but chloroform had been given while in transit to the hospital. He was operated upon immediately. There was found a tremendously distended gall

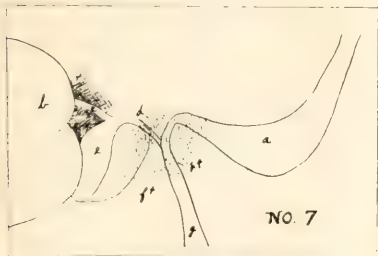
bladder containing fluid mixed with pus and four rough stones the size of a mulberry. A smaller stone could be felt in the common duct which could not be milked back into the gall bladder. This was crushed and removed by the gall stone forceps. The swollen condition in the region where the ducts entered the intestine led us to refrain from removing the gall bladder. We were sure that there was nothing passing through the duct. The patient was very jaundiced. Had we removed the gall bladder we would have defeated our purpose of



The gall bladder has been removed, the raw surface covered, and a small cigarette drain has been stitched over.

relieving this condition by drainage, as was shown by results that followed. He rallied from the operation promptly and his condition remained good until he was given food, when it passed through undigested showing no bile stain. At this time we gave him five grains of inspissated oxgall with each feeding for a few days when we were able to feed him his own bile which was collected by absorption with sterile gauze from the external opening of the drainage fistulae. This was squeezed out by the hands covered with sterile gloves into a sterile bottle and given with each feeding. On the tenth day following the operation, there being no sign of bile into the intestinal tract nor improvement in the patient's condition, we opened the wound and did

a jejunio-cholecystotomy at 9 p. m. with very little shock (Fig. 2). We had given him more than 1000 cc of normal salt solution in the vein during the operation. Twelve hours after the operation, he was given 700 cc of blood by the citrate method. On the seventh day following the operation, fecal matter drained from the external wound and we again opened the incision and found the

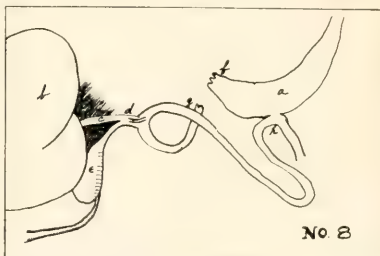


Showing malignant area involving pyloric end of stomach, duodenum, gall bladder and ducts.

attachment of the gall bladder to the jejunum, by means of the Murphy button had separated, forming a fecal fistulae. This was resected, an enter-enterostomy was performed, (Fig. 3) the distal and proximal ends of the gut being inverted, the opening in the gall bladder left by the button stitched over, and the gall bladder drained with a rubber tube. (Fig. 3). He was given another 1200 or 1400 infusion of normal hot salt solution, followed in a few hours with another transfusion of 700 cc of blood which was repeated on the third and eighth days following. The drainage of bile from the external fistula continued in enormous quantity until the thirty-seventh day following the first operation. He had been fed with it until it ceased to flow. There had been a little let up in the drainage for forty-eight hours when it stopped all at once and

never drained another drop. At this time he began to have bilious stools, his appetite became normal and we were able almost immediately to give him regular diet. Since this time his recovery has been rapid and uninterrupted except for some bad bed sores which had occurred during the profuse drainage. We had planned to do another cholecyst-enterostomy either with a Murphy button or by the use of a rubber tube (Fig. 4) if natural drainage had not occurred when it did. I think we were the first to feed the patient with his own bile, two or more drams at a feeding, with water equal parts. I did this first in 1920, upon a patient similar to the one under discussion and was able to carry him through until natural drainage was established through the common duct.

In 1885 and 1886 while in Bellevue Hospital with Dr. Austin Flint and



Gall bladder. Pyloric end of stomach have been removed cholecysto-enterostomy and gastro-enterostomy have been done.

while doing some original work in the study of gall bladder, the gall ducts and the bile, he drained the gall bladder and ligated the ducts upon dogs and they suffered no inconvenience while allowed to lick the bile from the drainage fistulae but as soon as they were muzzled and prevented from getting the bile starvation symptoms manifested themselves and progressed to an early fatal issue.

THE VALUE OF THE HISTORY IN DIAGNOSING TUBERCULOSIS BEFORE ETHER ANESTHESIA.*

By W. Bernard Kinlaw, M.D., Medical Service, Park

View Hospital, Rocky Mount, N. C.

The relative value of a history depends upon the circumstances under which it is used. In a well organized and equipped sanatorium or clinic where there are men especially trained to examine a chest, interpret stereoscopic X-ray plates, and take a history, the history is valued at approximately 33 1-3 per cent in the diagnosis, the X-ray and physical examination each 33 1-3 per cent. To the general practitioner, whose ear is not trained in detecting the early signs the history is worth a great deal more, probably 80 per cent. In a hospital that does 60 to 80 per cent surgery and does not have each chest examined carefully by an internist, the history of tuberculosis is worth at least 60 per cent, and in some cases 100 per cent, in making a diagnosis.

It is a well known fact that often a history is taken after the patient has had the anesthetic and is recovering from the operation. Seldom, in this day of the modern laboratory, is a patient given ether without a careful urinalysis, and a fairly careful examination of the heart, because it is considered a great mistake to remove an appendix and later find by urinalysis that the patient's symptoms were due to pyelitis. But how often are the posterior apices examined carefully after expiratory cough? All authors agree, however, that tuberculosis, pneumonia, and bronchitis are just as important contra-indications to ether as are nephritis and heart disease. An examination of the chest for tuberculosis is of little value unless one listens after cough following expiration. Especially is this true in the early cases.

It is indeed difficult and often dangerous to subject a patient with a surgical

disease of the abdomen to a thorough chest examination; but this fact does not lessen in the least the danger of giving ether to a patient with tuberculosis—either active or quiescent. Rather, it becomes all the more important to rule out tuberculosis, if possible, by a careful history.

In tonsil cases a careful examination and history could certainly be made. In the tonsil clinics, where a large number of cases are operated upon daily, it no doubt takes considerable time to do this: but what is this hour before operation in comparison to months and often years on "the cure" after operation.

In some hospitals a routine coagulation time is done on all tonsil cases. Such measures are certainly of great importance, but if the surgical patient goes home with a nicely healed scar, or with both tonsil fossae clear and every piece of adenoid tissue removed, and in a few weeks or months is admitted to a sanatorium with far advanced tuberculosis was that operation a success?

While on the staff at the State Tuberculosis Sanatorium, I was greatly impressed with the number of patients who had been operated upon under ether anesthesia and who must have had tuberculosis at the time of operation.

A Report on One Hundred and Sixty Cases.

In making a survey of the case histories of patients being treated at the Sanatorium at that time, I found that in one hundred and sixty cases there had been forty-six operations, thirty-six with ether and ten with local anesthesia. Of the thirty-six cases receiving ether, twelve, or 33 1-3 per cent, would have given a positive history of tuberculosis at the time of operation. This positive history could have been obtained in a few minutes by asking the patient five questions:

(1) Have you ever expectorated any blood?

A hemorrhage from the lungs—and any amount above a dram is considered a hemorrhage—means tuberculosis until proved otherwise. A patient will often say "I spat up a little blood but not

*Read before the Seaboard Medical Society meeting, Rocky Mount, N. C., December 3rd, 1924.

enough to amount to anything." As hemoptysis is often the first symptom, ether should not be given, but the diagnosis of tuberculosis made and the patient given a chance to get well.

(2) Have you ever had pleurisy characterized by a sharp cutting pain in your side on breathing?

Pleurisy, either dry or with fluid, not associated with pneumonia, is almost always caused by tuberculosis. The burden of the proof is on the physician, and unless he can positively rule out tuberculosis, ether should not be given.

(3) Have you had an anal fistula?

Although the percentage of cases of tuberculosis that have a fistula is not high, the percentage of cases of fistula that have tuberculosis is very high. History of fistula must be considered a positive value until proven otherwise. In these cases there is always time for an examination of the chest, not a hurried listen here and there, but a careful systematic examination by an examiner competent to diagnose early tuberculosis. If the patient cannot be operated upon satisfactorily with novocain or nitrous oxide, it is better to dispense with the operation than to light up an old trouble in the chest or spread a small amount of beginning disease.

(4) A history of subnormal temperature (taken with thermometer) with an afternoon rise, especially with a history of malaise and weight loss, when syphilis and focal infection can be ruled out, must be considered so indicative of tuberculosis as to contraindicate ether as an anesthetic.

(5) Have you ever had a chronic cough which lasted over a month?

If so the etiology of the cough must be settled. Many patients (women included) think their cough due to smoking. Smoking may aggravate cough; it seldom initiates one.

A positive answer to any of these questions, in the absence of a careful chest examination and X-ray diagnosis, certainly makes a local anesthetic the one of choice.

All twelve of these operations could have been performed locally. On admission to the Sanatorium all of these

cases, with the exception of one, were classified as moderately or far advanced. The salient points in a few of the cases are given below:

Case 1—Miss S., age 21. Healthy child and young girl until two years ago when she noticed malaise and gradual loss of weight, though she carried on fairly well until 9 1-2 months ago, when she had four hemorrhages, over a period of one month. She thought blood came from throat. Amounts varied from one-half to two and one-half ounces. Her tonsils were removed under ether anesthesia, as they were thought to be the causal factor of hemorrhage. One month later patient was in bed with subnormal morning temperature and rise to 101-102 in afternoon. Her father died of tuberculosis four years ago; patient lived with father. The X-ray and physical examination on admission showed both lungs involved. Classified as Moderately Advanced B.

Case 2—Mr. J. History of cough for past 18 months, dry and hacking cough during first 12 months, then became productive, with muco-purulent expectoration, more pronounced in the mornings. Thought his cough due to smoking; was smoking 10 or 12 cigarettes daily. Has been very susceptible to colds during past two years and noticed he was more short of breath, and tired more easily on exertion during past six months. Two months ago appendix was removed with ether anesthesia, two weeks later patient had severe pleurisy and night sweats, and temperature in the afternoon to 101. Has one brother and one sister with tuberculosis at present. Was admitted with far advanced tuberculosis with doubtful prognosis. There were moist rales throughout both lungs with cavities in one.

Case 3—Mrs. B. Had pleurisy in left side in January, 1923. In bed four days. Since then cough has slowly progressed and she thinks she began a slow weight loss, with progressive weakness and malaise, doing no housework since pleurisy. Six months ago cough became productive, worse in mornings with muco-purulent expectoration. In July tonsils were removed under ether

anesthesia, followed by a rapid progression of symptoms. Father died with tuberculosis five years ago. Classification: Far Advanced C, X-ray showing marked involvement with cavities in left lung.

The other nine cases gave practically the same histories as the three cited above. If the patient has tuberculosis it is easy to get a positive history in a large percentage of cases. The important thing is to think of tuberculosis, even if the patient does appear to be in perfect health. The sins of omission may be greater than the sins of commission, and a combination of the two, as in cases of this kind, hinders greatly in the fight against this dread disease.

The last words of the late Sir William Osler to the general practitioner on the subject of tuberculosis were:

"The leadership of the battle against this scourge is in your hands. Much has been done, much remains to do. By early diagnosis and prompt systematic treatment of individual cases, by striving in every way possible to improve the social condition of the poor, by joining actively in the work of the local and national anti-tuberculosis societies, you can help in the most important and the most hopeful campaign ever undertaken by the profession."

THE RELATION OF DENTIST, CLINICIAN, AND ROENTGENOLOGIST.

By C. C. Phillips, M.D., and R. H. Lafferty, M.D., Charlotte.

The relation between the physician and the dentist is one that in recent years is demanding attention unthought of a few years ago. Formerly the dentist's work was very largely mechanical. There was no point of contact between physician and dentist. When the roentgenologist began studying the teeth and surrounding tissue, it was found that much information could be obtained. Finally a fairly accurate idea of the nor-

mal and abnormal appearance of the teeth was formed and when, in 1911, Sir Wm. Hunter presented his paper calling attention to the seriousness of systemic infection traceable to oral foci, the roentgen examination became a more important factor. Then the examination of the teeth became almost as important a part of a routine examination as the urinalysis. This one fact has brought the dentist into the field as a consultant and has brought thousands of cases under his care that otherwise he would not have seen.

No one more than the roentgenologist realizes the limitation of the roentgenogram in dental work, as well as along other lines. And no one more than the roentgenologist appreciates the clinical study. No one more than the dentist and physician realizes the value of the roentgenogram for indicating the teeth that are in need of attention. In the case of a patient suffering from a focal infection, the physical examination, the roentgenological examination, and the dental examination each has its place, and if we have his welfare at heart, we should give him the benefit of all these methods of study.

Shall a technician make and finish a film and pass it for interpretation to a physician, who has had little or no experience or training in reading dental films, or to a dentist, who may have had more experience, but who finds it difficult to keep from reading the clinical findings into him?

Shall the medical roentgenologist make and interpret dental radiograms? This question has been much discussed. We feel that the roentgenologist who combines experience and training with his knowledge of pathology and anatomy should be as capable of giving an intelligent reading of a dental roentgenogram as of a roentgenogram of a stomach or chest. Certainly if he has had any experience with a real dentist who would consult with him in regard to his cases, he should give a sufficiently intelligent reading to be able to advise the patient or the referring physician as to whether or not he should consult a den-

tist, or as to whether or not there is sufficient pathology to warrant the assumption of apical infection. Very often this dental study is but a part of a general roentgenological examination, and it gives the information that leads the physician to ask for a dental examination. Should the dentist alone make the radiological examination of the teeth? There is no doubt that a radiogram of a tooth during treatment is of much help to the dentist and perhaps should be used more than it is. The X-ray machine in a dentist's office is one of his most valuable pieces of equipment if it is used conscientiously—not simply as a method of advertising or as a boost to his preconceived clinical opinion and, furthermore, the relation of pathology in teeth and jaw to systemic disease must necessarily be appraised by the physician.

What is the ideal relationship of roentgenologist, clinician and dentist? The ideal, of course, is that of a triangular consultation centering in the clinician. A patient comes in and the physician after examination thinks it probable that he is suffering with a malady that might be due to some focus of infection. In the course of the X-ray examination of different areas the teeth are examined. The radiologist includes in his report a statement that certain teeth show apical abscesses, pyorrheal pockets, or some other trouble that should be further investigated. Then the physician wishes to consult with a surgeon if it was found that there was a cholecystitis or some condition needing surgical treatment. Is the dentist going to refuse to consult with the physician whose knowledge of general pathology may be of great value to him and to the patient? Are they both going to refuse consultation with the roentgenologist whose knowledge of X-ray shadows is of service long recognized? When the dentist was simply a mechanic pulling teeth and plugging holes, the physician did not feel that a consultation was necessary. If the radiologist be simply a technician who knows nothing of pathology, his consul-

tation will be of no service. But where each is a specialist, knowing his work and pathology, and bringing something from his special field to the service and relief of the patient, it is not just to the patient to omit either.

It would be a regrettable condition if the physician and dentist could not consult and if the patient in the course of a roentgenological examination could not have the benefit of an oral study along with his other examination.

THE PRINCIPLES OF TREATMENT OF ACUTE CRANIAL INJURIES.

By Thos. D. Sparrow, M.D., Charlotte, N. C.

The discussion of a subject of this nature leads immediately into a labyrinth of conflicting theories and definitions from which one emerges haggard, worn and somewhat befogged; still there are certain fundamental principles which govern the treatment of fractures of the skull and the accompanying brain injuries upon which most of the authorities agree. It is the purpose of this paper to correlate these principles so far as possible, and to glean from them the rational procedures governing the successful handling of acute cranial injuries.

It is important to remember that we are dealing with a bony, vaulted, inexpandable cavity, almost completely filled with a soft, highly specialized tissue, surrounded by three enveloping membranes of varying strength. Within this tissue are four well-defined ventricles in the two lateral of which is secreted an almost definite amount of a peculiar fluid. This secretion finds exit into the third ventricle through the foramina of Monro, passing on into the fourth ventricle by the aqueduct of Sylvius and by the foraminae of Majendie and Luschka into the subarachnoid space. A minute portion covers the brain and a larger amount the spinal cord.

A trauma of this bony, vaulted cavity may be of sufficient strength to crush the vault and injure the underlying

brain, or it may merely crack the vault without injuring the brain. Because of the shape of the skull the whole force of the blow may be transmitted to the opposite side of the vault or to its base. Because of the intimate contact of the brain and skull the force of the trauma may injure the brain by the "shake up" or jar, while the integrity of the vault itself remains intact. Again, because this inexpandable cavity is almost entirely filled with brain, any acute or chronic enlargement of the brain must produce increased pressure within the cavity. Any trauma sufficient to cause fracture or brain injury is accompanied by varying degrees of primary shock. Thus the first principal in the successful treatment of cranial injuries is attention to primary shock.

Probably no term in medicine is associated with more confusion, as to its meaning, than concussion. For this reason it is necessary to define it and ascribe to it a definite symptomatology. Concussion has been defined as "acute cerebral anemia with vaso-motor paralysis." It has certain characteristics which distinguish it from the severer forms of head injury. There is at the time of injury a sudden, immediate onset of symptoms with unconsciousness, the maximal effects being manifested at once. It is a transitory affair, improvement beginning almost immediately and consciousness returning within a space of time varying from a few minutes to several hours. There is in these cases no demonstrable pathology. This condition, therefore, is the "knockout" seen so often in trivial accidents as on the athletic field, where after a brief period of unconsciousness the victim may return to his accustomed activities; but when the concussion is associated with shock he requires more vigorous treatment followed by a longer period of rest and quiet.

Linear fractures or cracks, without brain injury, require little treatment except for shock.

Simple depressed and gutter fractures should be operated as soon as the patient recovers from primary shock, not so much because of the immediate ne-

cessity as the danger of remote developments. Should pressure symptoms arise they must be treated.

Hemorrhage may be either extra-dural, subdural or intra-cerebral. The extra-dural hemorrhage is from the middle meningeal artery, one of its branches or the longitudinal sinus, in the majority of cases. This gives the typical symptoms of initial concussion, lucid interval and gradually increasing local or general pressure symptoms. It is obvious that operation is the treatment indicated. The sub-dural hemorrhages are usually small in amount and resolution will take place in most cases without operation. Intra-cerebral hemorrhages are phases of a grave profuse injury of the brain. They are difficult to locate and surgery is seldom indicated.

In treating compound fractures of the skull. Sach (1) advises a debridement, elevation of any existing depressions and removal of bone fragments, closure if possible, without drainage or at most with a small drain of rubber tissue.

Fractures of the base, because of their gravity and the danger of infection, give a rather high mortality. There is some disagreement as to the relative value of the operative or non-operative treatment. It is established, however, that there is no necessity to ruthlessly rush these patients to the operating table and perform a decompression. The shock should receive first attention and palliative measures instituted. It often happens the patient "decompresses himself," so to speak, through the leakage of cerebro-spinal fluid through the ear, nose or pharynx. When this occurs care must be exercised to prevent infection through these openings. Lumbar puncture should be cautiously used, should compression symptoms arise. We are inclined towards the use of salines for controlling the compression symptoms, but in some cases where a basilar clot forms operation is necessary. In these cases the bi-lateral subtemporal decompression with irrigation of the base as described by Elsburg (2) is probably the method of choice. Recent statistics as compiled by Brown (3) and Grant (4) would lead to the opinion that

the non-operative treatment gives the best results.

Probably the most difficult cases are those in which there has been brain injury. There may or may not be evidence of fracture but the symptoms progressively become worse and there is definite manifestation of intra-cranial pressure. This is more than simple concussion. Here there is contusion—manifest injury of the brain, or laceration—microscopic tears within the brain substance. What happens in these cases? When the brain is injured either contusion or laceration edema is always associated. This edema usually begins locally at the site of the injury and spreads generally over the brain.

As the brain enlarges from edema, the inexpandible cranial cavity becomes too small. As a compensatory measure the cerebro-spinal fluid is pushed down into the spinal canal. This then is the **first stage**, or the **Compensatory stage**, of Compression.

The edema does not subside at this point and there comes a time when this source of relief is no longer available. The venous circulation is encroached upon and a cyanosis or hyperemia results. This is the **second stage** of compression or the period of venous stasis. It is characterized by irritability of the brain as expressed by headache and rise in temperature, and more or less engorgement of the retinal vessels.

Should there be no relief, the third stage, or that of cerebral anemia, is ushered in as the arterial circulation is pressed upon. In an attempt to overcome this anemia there is an increase of vasomotor activity with an increase of blood pressure. Should the pressure be continued and should not the integrity of the arterial circulation be restored, there comes the final stage of imperfect nutrition with marked suppression of brain function, medullary compression, vagus paralysis, thready pulse, shallow respiration and death.

The successful treatment then of these cases must be directed toward relieving the compression. According to Sach (1) there are three possibilities. First, give more permanent room by subtem-

peral decompression; second, give more room by spinal puncture; third, remove edema by salines.

Subtemperal decompression has until recently been the method of choice. There are many objections to its use. In the first place it in no way attacks the cause of the compression, i. e. the edema. In order to be of any practical use a sufficient opening must be made to allow the brain to bulge out of its normal confinement. The mere draining of a small amount of spinal fluid is useless. When the brain does bulge out of the opening there is danger of trauma against the sides of the opening. This probability may be lessened by a ventricular puncture. Even though the decompression is properly done under cover of the temporal muscle, there is the danger of deformity, and the procedure subjects the patient to the additional operative shock and trauma.

Spinal puncture undoubtedly has its place and is an asset in the treatment, but, as in the first instance, it is not directed to the cause of the pressure which comes from an edema of the brain substance and not from an increase in the amount of cerebro-spinal fluid. As we have seen in the compensatory stage of compression, nature takes advantage of this method of lessening intra-cranial pressure.

It seems the most logical method is that of attacking the edema itself, and the most successful means of doing this has been through the use of salines.

In 1919 Weed and McKibben (5) first showed the effects on decreasing cerebro-spinal fluid and brain volume by the intravenous injection of hypertonic salt solution. The next year Foley and Putman (6) showed that similar results might be obtained by using it by mouth or rectum. Haden (7) in 1919, Cushney (8) in 1920, Sach (9) in the same year, and recently Cohen (10) have contributed to this subject. Dowman (11) in 1922 used magnesium sulphate by mouth and sodium chloride by vein with gratifying results. In 1923, Fay (12) working in Frazier's clinic in Philadelphia, published his work on the comparative values of magnesium sulphate and

sodium chloride. He (13) has since added evidence to this work going so far as to show that dehydration may be carried too far by this method.

By experiment he found that "magnesium sulphate in the same isotonic solution is almost twice as effective in dehydration as the sodium chloride under the identical circumstances." He offers as an explanation of this the fact that magnesium sulphate is not dialyzable. Since the sodium chloride is dialyzable it will diffuse into the tissues, equaling the amount in the circulation and thereby losing its hygroscopic value. In addition the kidney elimination may so deplete the salt in the circulation that there is an actual reversal of fluid direction into the tissues.

The contra-indications to the use of magnesium sulphate are (1) shock, "because the shocked condition prohibits progressive tissue edema of the brain," (2) severe blood loss.

This very naturally brings up the question: How can shock be distinguished from compression? The observation of the temperature and respiration gives the most important information. In shock the temperature is subnormal with rapid pulse and respiration. In compression the temperature is elevated and the respiration slow. The pulse is slow until the later stages when vagus paralysis begins.

Probably one of the most practical procedures is that outlined by Grant (4) It is in brief as follows:

On admission the pulse, respiration, temperature, and blood pressure are taken. If the systolic blood pressure be below 60 and the temperature subnormal, the patient is considered in a state of shock. The head is lowered, heat applied and 1-3 ampoule of pituitrin is given, lacerations are cleansed and hemorrhage stopped. A solution of 2 oz. (Fay advises 3) magnesium sulphate in 6 oz. water is allowed to flow into the

rectum. "Nothing else is attempted until the temperature has reached normal and blood pressure is above 60." Then X-ray and neurological examinations may be made. Lumber puncture is done. If the pressure is twice the normal of 10mm. it is reduced to normal. If more than twice normal it is reduced one-half. This may be repeated in eight hours. Magnesium sulphate 1 1-2 oz. of crystals to 6 oz. of water by mouth, or 2 oz. of crystals to 6 oz. of water by rectum, are given every four hours. This, in the majority of cases, will control the pressure symptoms.

Should at any time definite localizing symptoms be present an operation should be performed. Should the saline treatment fail, then, and not until then should a decompression be done.

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*A journal for the promotion and diffusion of
usable medical knowledge.*

Outline of Purpose and Policy.

With this issue the responsibility for this journal is assumed by a new management. The incoming editor deems it both fitting and needful that a declaration of the principles which will govern its policy be made.

In the very beginning we wish to align ourselves with the American Medical Association and to declare our intention to conform to its standards in every possible way. It is frequently said that the A. M. A. exerts its powerful influence in an arbitrary manner, unfairly discriminating against worthy firms and products. Undoubtedly, instances of injustice have occurred. But, in carrying on a work of such scope and intricacy this is inevitable. When we view in retrospect the state of medical affairs in these United States during the days of a weak A. M. A., and compare them with those of its present strength, we must perceive that its influence has been overwhelmingly for good. Much has been accomplished; much more lies ready to the hand of a strong, united Association, intent on working out the problems, which, as individuals, we could never hope to solve.

The news columns will be open to any reputable medical man offering a contribution which appears to merit publicity. The subject matter itself will be given first consideration. Facility and precision of expression are seldom gained in the utilitarian courses of today; therefore, they will not be rated prerequisites, though greeted joyously at their infrequent appearances. Preference will be given to articles dealing with original work or personal clinical experiences. Research which has direct clinical application is desired above any other class of essay. With a few notable exceptions, the medical profession of this section has almost entirely neglected this field of medical science, and has been content to quote northern, eastern, western and foreign investigators. Let us do more investigative work and progress to the point where we can quote ourselves and each other as final authorities on special subjects.

The editorial columns will be vigorously conducted in the interest of regular ethical medicine. We shall not complacently accept the name of **allopaths**, with which the irregulars have, as part of a clever scheme to jockey us into a false position, so cheerfully dubbed us. We have no distinctive theory of therapy, beyond these two: (1) remove the cause of the disease when practicable; and (2) use any remedy of whatever nature, which has, through carefully and intelligently checked experience, proved most productive of good. The fantastic cults and isms will be energetically opposed and exposed at every opportunity. The barrenness of their achievements; the ridiculousness of their claims; the falsity of many of their testimonials; the palpable dishonesty of a great number of their institutions; and the final crowning fact that practically without exception, their "patients" eventually turn for succor to the regular medical profession, which they have spent their days of strength and prosperity in deriding, will be referred to as occasion requires.

Almost daily the necessities of his patients bring the doctor into professional contact with the dentist and the pharmacist. Many of our most trying problems must be solved, if at all, by collaboration with one or both of these. To a great extent we have drifted apart. It will be the continued policy of this journal to promote the growth of intimate relationships, joint-studies and joint-meetings between dentists, pharmacists and doctors.

A few years ago the author discussed with Dr. J. C. Bloodgood the advisability and feasibility of increasing the number of post mortem examinations in this section. He was very emphatic in the opinion that many more could and should be done. The prejudice against this measure in this conservative section has been greatly overestimated. Some of the statements to the contrary are based on indifference; some on conviction; and, probably not a few on dread of having diagnoses checked up by the pathologist. Energetic, enthusiastic clinico-pathological conferences, conducted on the plan of having the clinical record written, signed and sealed, to be opened and read as an immediate preliminary to the pathologist's incision; clinical findings and opinions to be subsequently checked with the final findings, is the way of real medical advancement.

The journal will consistently advocate and support all measures in consonance with this idea.

The influence of altitude, humidity and temperature on the progress of tuberculosis has been tremendously exaggerated. As proof of this may be cited institutions which are achieving brilliant results in locations ranging in altitude and temperature from the heights of the Rockies, Adirondacks and Alps to the sand hills of North and South Carolina and the shores of the Mediterranean; and in humidity from Asheville to Albuquerque. There lurks the suspicion that one of the motives which impelled the first doctor to advise

a victim of tuberculosis to "go away for your health" was a desire to free himself from responsibility, probably assisted by a normal wish to see no more of a patient he had been treating so long and with so poor success.

This has an eminently practical bearing on one of the important recent developments in the anti-tuberculosis crusade; namely, the building of county sanatoria. The journal believes that, other things being even approximately equal, the best place for a patient with tuberculosis is that in which he will be happiest; and that is usually not far from home.

Within the professional memory of most of us, it was a difficult matter to induce patients with acute diseases demanding surgical intervention, to have urgently needed operations done. With improvement in operative technique, the immediate dangers incident to surgery have been so greatly reduced as to admit of abuse of the privilege of being more or less eviscerated. This tendency on the part of patients of a certain type to seek, and even demand, operation is a source of embarrassment to the honest surgeon. One such case under the writer's observation entered a hospital for the express purpose of having a famous surgeon do a laparotomy. A few months prior to this her appendix and a part of the right ovary had been removed with some vague idea of obtaining relief from symptoms equally vague. Operation was refused, and the patient sent to a hospital for nervous diseases. More than ten years afterward she reported having lived a practically normal life throughout the interval. "Reflex" symptoms are followed by surgical treatment in too large a number of cases; and "adhesions" are generally blamed for the aftermath.

In many instances a patient who is suffering from some ailment which he suspects may require surgical treatment goes directly to the surgeon for advice and treatment. In such a case the surgeon is judge and jury, and may, perchance, his art failing, act in a third

role for which an analogue could be found in legal lore. In emergencies he must often depend on his own unaided judgment. In the great majority of cases however, there is abundant time for consultation with specialists in other lines, thus obtaining light on the case from more than one angle before submitting the patient to dangers and expense incident to operation. Most surgeons follow this method practically as a routine. It is to be commended as offering decided advantages to patient and surgeon.

A patient is entitled to the best offices of the physician into whose hands he falls. In referring this patient to another man in the profession, the doctor must choose the one whom he judges to be ablest among those available. For making a correct decision on this point his judgment must be untrammelled. This can not be the case if the percentage of the fee obtainable enter into the calculation. The journal is actively opposed to the splitting of fees under whatever guise or by whatever indirection.

Beginning with the next number, the journal will carry, in each issue, an epitome of the knowledge to date of one of the commoner diseases afflicting the population of this section. From time to time, as additions are made to our knowledge, they will be carried under an appropriate title. The idea behind this is that of supplying the family doctor with authentic, up-to-date information on the diseases which are his daily concern, and of keeping it up-to-date, all in a small compass. Incidentally it will afford a ready means of giving the men in the specialties reliable information on subjects embraced in the other specialties, but of interest to all medical men.

We are in favor of extension of the field of honest, direct professional advertising. No good reason has yet been given why it should be considered proper and ethical for a doctor, who has a

private hospital for the accommodation of his patients, to insert advertisements to that effect in medical journals; and improper, unethical, or even questionable, for another doctor to advertise the fact that he sees his ambulatory patients under one roof and hospitalizes those no longer able to walk under another. A tendency to follow out this idea is to be noted in some of the state journals of high standing. This subject will be thoroughly investigated and treated more fully in an early issue.

These and similar principles will guide the conduct of this journal. We seek the active co-operation of all to whom they appeal. Criticism will be welcomed and given earnest consideration; the pointing out of faults being regarded as far more valuable than indiscriminate praise. This state has made phenomenal progress along other lines. It is entitled to a medical journal in keeping with its other achievements. If the doctors of the state wish to *help themselves* by encouraging this project in practical ways such a journal can be produced. It will not spring Phenix-like from its ashes.

Dr. Townsend.

On the death of Dr. E. C. Register, some four years ago, Dr. M. L. Townsend assumed the conduct of the Charlotte Medical Journal. Dr. Register's health had been precarious for a long while and the journal had suffered much from the lack of his usual energetic attention. Dr. Townsend, only recently returned from overseas and having no familiarity with the details of this kind of work, undertook the task of rehabilitating the journal. Despite these handicaps he has greatly improved the news columns, elevated the tone of its advertising, and enlarged its subscription list. After a short while the name was changed to that which it now bears.

During a large part of this time he was also discharging the duties of chief of the local Veterans' Bureau and conducting a private practice. The last several numbers have suffered through no fault of his, but because of his having been drafted for work with the State Board of Health. His new labors will partake of the character of those he is leaving, the office being that of Director of Publicity.

The profession of the State and section is indebted to Dr. Townsend for having kept the journal alive over this period. We wish and predict for him a useful and happy career in a field so suited to his inclination and capacity.

A Means of Preventing Automobile Accidents.

Daily observation strengthens the impression that the most promising means of reducing the number of automobile accidents on the streets of cities is not being taught locally. A visitor to New York, even before the advent of the automobile, was instructed to follow this simple direction for crossing streets: "Pause on the curb; look to the left till exactly in the middle of the street; look to the right till on opposite curb." Some of those engaged in "Safety First" campaigns have advised school children to pause, look both ways, and, if the coast is clear, to rush across the street. The writer regards this as pernicious teaching. An attempt on the part of a person crossing a busy street to note the traffic from both directions will invariably result in confusion. If an emergency develops, confusion will be transformed into panic. Panic will usually end in tragedy.

Let every one bear it in mind that drivers will keep to the right of the middle of any busy street, and that the exact middle of the street is a **safety zone** where one may stop and take his bearings. By putting this knowledge

into effect in the manner noted in the afore-mentioned directions, lives will be saved, traffic facilitated, and the nervous systems of drivers and pedestrians preserved. Try them and see!

Endorsements.

"Dear Doctor Northington:

"Dr. Townsend has told me that he has become a member of the Department of Health of North Carolina and that you have taken in your charge Southern Medicine and Surgery. I scarcely know whether to congratulate you or to commiserate you. If the doctors of North Carolina will lend you their supporting sympathy your work will be joyous; if they will not do that they will be undeserving of what you are undertaking to do for them.

"Your state has a number of good newspapers; it has technical publications of one kind and another. I can think of no reason why a good medical journal should not have proper support in that state.

"I believe in a personal publication. In my boyhood days people read and they talked about what Greeley and Dana and Henry W. Grady and Watterson and Hemphill and Caldwell had to say in their newspapers. The individual editor has ceased to exist. No one now knows who writes the editorials for the newspapers. No one cares. The editorials are the vague voices emanating from a great corporation. They lack the personal flavor. They excite no lively discussion. The great newspapers are disseminators of news. Their editorial columns are without influence. The anonymous contribution has never gripped the heart of man.

"I hope your personality will appear on every page of the Journal. I hope the editorial page will be your page. On it I hope you will give absolutely free expression to your medical opinions. You have been a successful practitioner, you have read wisely and well, you know mankind sick and well, you have the happy faculty of saying with written

words in charming fashion what is in your mind. Breathe upon every page of the Journal your spirit. Open its pages to the doctors of the state. Let them understand that its pages will be theirs for the discussion of problems of interest to all the people of the state. In the practice of the medicine of today are comprehended consideration of all the things that come in contact with human beings—soil, water, dust, noise, architecture, chemistry, agriculture, education, religion, politics, and every other conceivable kind of philosophy.

"I hope your Journal will be under your control, and not under the control or the influence of any other organization so long as it is yours. Make its editorial page sparkling and lively and individual and human. Let the contributions be such as will be helpful to the doctors of the state. Let the advertising pages be free from eulogies of worthless concoctions.

"The American Medical Association, or rather some of its officers, are evidently trying to root out of existence all medical publications in the United States that they cannot control. That movement should be combatted. It should not be allowed to succeed. I have no patience with the theory that nothing can be done by an individual and that anything that is to be worth while must be done by impersonal aggregations. The adoption of that notion has hurt the press, it has had a bad influence on education, religion, the practice of medicine, and on individual morals.

"North Carolina is blessed with a good medical profession. The profession in your state should be blessed with a good medical publication of its own.

Give them that publication and the doctors will be helpful and loyal to you. I promise you my unwavering support. I invoke a blessing upon your efforts.

Faithfully yours,

"JAS. K. HALL."

Richmond, Va.

December 5th, 1924.

"My Dear Doctor Northington:

"Your letter in response to my criticism of a recently published paper, was received; and, may I tell you, that the kindness and courtesy of it, made me want to shake your hand, and thank you for having gotten "the spirit" of my letter.

"Now, I love your publication, because it is of North Carolina, and also because of the truth that all publications, of any circulation at all, mean force for either good or ill in the work. With this thought leading me on, may I take the liberty of giving you the names of several men, professional men of the highest type, and personal friends of mine, to whom you may write, asking them to give to your Journal, each one, a paper for publication, along his line of thought, and work. If, in your touch with them, you care to tell them of the suggestion having come from me, you may, but please use your own pleasure and judgment about it.

"Please forgive me, for a seeming intrusion into your field of work; and please remember that you may either use, or forget, all that I have said and written.

Very sincerely yours,

"H. S. LOTT, M.D."

Winston-Salem, N. C.

December 1, 1924.

DEPARTMENTS

Pediatrics

Frank Howard Richardson, M.D.,

One of the pleasures of conducting a column like this, consists in sharing with others interested in the problems of children anything found that is distinctly helpful. Such a find is a volume entitled: "The Child: His Nature and His Needs—A Contribution of The Children's Foundation." It is a book setting out to "bridge the gap" between the mass of theoretical knowledge of children, and its application by those who have to deal practically with them. It particularly stresses the psychology of the child, normal and abnormal; but it deals as well with his physical side, as witnessed by its inclusion of an article on the "Relation of Nutrition to Mental Development," by Wm. R. P. Emerson, M.D.

It contains articles by sixteen leaders in their respective fields; and contains some of the most valuable material for those interested in the problems of children that has been made available in a long time. For those interested in the child in school,—and the readers of this column have been urged to become interested in the children of the schools of their localities, as one of the most important of their duties as physicians,—the volume is invaluable.

One of the most striking articles is that by H. H. Goddard, who, while in charge of the Vineland School for Feeble-Minded, codified the Binet-Simon test in such a way as to make it the standard intelligence test, simple and of proved value in the hands of all those dealing with children of questionable mentality. Last month's editorial on the detection of the mentally retarded in our schools, and their segregation for their own sakes as well as for that of the other children in the grades, gave

but a suggestion of the scholarly treatment Dr. Goddard gives this whole subject. The Prevention of Delinquency is considered by Wm. Healy, M.D., of Boston; The Care of Intellectually Inferior Children, by Arnold Gesell, M.D., of the Yale Graduate School; and the whole subject of Nervous and Mental Hygiene Among Children, by William A. White, M.D., the dean of the psychiatrists of America today. One of the most thoughtful as well as thought-provoking chapters is that on "The Adolescent Period," by Winfield Scott Hall, M.D., of Northwestern University Medical School. All of these, as well as many other chapters, will well repay the careful attention of physicians who are, or who may become, interested in this huge medical problem presented by our public schools, and the children to whom they are attempting, with greater or less success, to minister.

One particularly stimulating chapter deals with what is being done in some especially wide-awake places, with the intellectually superior children,—who, contrary to general impression, have been found well worth special attention, by the fact that they can progress so much faster than the average, and maintain their superiority as adults, instead of slipping into mediocrity in the years following school life, as we have been in the habit of thinking.

Of particular interest to those of us who are concerned primarily with the status of the schools of a rural and small-city state like our own, is the chapter on Promoting the Health and Physical Development of School Children, by Professor M. V. O'Shea, of the University of Wisconsin. He gives a most comprehensive survey of the school situation with relation to the health of the children. It is rather a jolt to our complacency to be told that the country

child as a play is less well taken care of, from the play-ground standpoint, than is his city cousin,—and yet those of us who have given any serious thought to the question realize at once that this is quite generally the case. “Country children, contrary to popular belief, do not play as great a variety of games as children in towns and cities, where there are playgrounds.” School strain, faulty posture and its results, and methods of teaching hygiene, are among the vitally interesting topics which are given masterly treatment. It is really misleading to name particularly or to quote articles or parts of articles; for those not mentioned at all may be quite as valuable, at times even more so, than those singled out thus arbitrarily for mention.

It is particularly noteworthy that so much of this work is being done by physicians. This ought of course to be the case; and yet those of us in active practice are so apt to be loath to undertake such direction of affairs, that there is always a danger that we may allow it to lapse into the hands of laymen, who must take up the work that we have neglected, should we fail to measure up to our responsibilities. The public is generally willing to take the doctor's word in all matters of health, public and private, as against that of any other individual or agency; but when, from modesty, preoccupation with personal affairs, or any other perfectly good reason, we remain silent upon such questions of public policy, we can hardly in fairness protest when the leadership that we have declined is assumed by others in the community. The task lies ready to our hands; and if there was a task in both preventive and therapeutic medicine, it is that provided for us in the public schools of our country today.

Just one word more, as to how this book may be obtained. It is the product of a foundation endowed “for the dissemination of knowledge promotive of the well-being of children,” functioning under a “charter granted to it as a corporation not for profit.” For this reason the price of the book has been made, almost ludicrously, one dollar. It

is sent to anyone sending this amount to the Children's Foundation, Valparaiso, Indiana. The bookmaking is that of a volume for which one would ordinarily expect to have to pay three or four times that sum. It would be hard to overstate its value to the busy physician who wants to do his duty to the children in his local school.

Roentgenology

Robt. H. Lafferty, M.D.,

During the last few years we have seen some strange occurrences due to patients running around with their X-ray films. One case we recall where a landlady turned off a boarder because she had a “spot on her lung” that she saw on an X-ray film the patient had gotten from a radiologist. (The “spot” was the heart shadow). The following paragraph in point is quoted from Dr. Jas. T. Case in *J. A. M. A.*, June 21, 1924, p. 2073.

“To whom do the films or plates belong? Surely not to the patient, for he pays not for a “picture” but for an examination, and he is no more entitled to the “pictures” than he is entitled to the cover slides containing the microscopic sections of tissue in his case, or the smears of blood used for making ordinary or differential blood counts. The roentgen-ray films constitute only a part of the record. If we say that he is entitled to a copy of his roentgen-ray “pictures” merely because the roentgen-ray records are susceptible of being printed, why not extend the idea and give the patient a photograph of the proctoscopic or vaginal findings or a photograph of the eye-ground or the larynx or the pharynx? A relatively small outlay of cash will provide apparatus for making photographs in connection with proctoscopic, vaginal, cystoscopic and other similar examinations, and so on ad absurdum. As a matter of fact, the roentgen-ray

films belong to the hospital where the patient's records are kept. Prints of films in the hands of patients lead only to false interpretations, confusing opinions, multiplicity of advice and bad results. Wise laws are being passed in a number of states and provinces requiring the hospital to retain their roentgen-ray films for two years or more."

In the J. A. M. A. for Nov. 29, 1924, p. 1757, Doctors Gover, Christie and Merritt, of Washington, have a paper on "The Roentgen-Ray Treatment of Hyperthyroidism." They review the literature and the reports of end results from some of the best surgical centers. They report in detail several cases and a summary of 114 cases. 58 reported permanently cured. 23 such definite improvements that they will probably all be placed on the cured list when sufficient time has elapsed. Five have died from other causes; one died from hyperthyroidism before the second treatment; four were operated before the treatment was completed. We quote in full the last paragraph and the conclusions prescribed in this excellent paper.

"We look on these results as very satisfactory, especially when we consider that many of the cases submitted to roentgen-ray treatment are of very severe type with a basal metabolic rate above plus 100 per cent., and that some of them are quite inoperable because of their extreme toxic condition, or the presence of some concurrent disease, and that others are operative failures.

Conclusions.

"1. A study of the results of roentgen-ray treatment of hyperthyroidism in individual cases by means of the incomplete statistics so far available indicates that this method will probably furnish about the same percentage of permanent cures of exophthalmic goiter as surgical treatment in the best hands.

2. The roentgen-ray method has the following advantages: (a) There is no mortality resulting from the treatment; (b) patients will submit to this method of treatment at a much earlier stage of the disease than to operation; (c) the method is applicable to inoperable and to postoperative cases.

"3. Patients with hyperthyroidism should first receive roentgen-ray treatment, and be operated on only if the disease fails to respond to this treatment. This would not apply to patients with toxic adenoma with mild hyperthyroidism who have no vascular or other diseases which render them inoperable. The operative mortality in this class of cases is very low, and surgery has the great advantage of removing the tumor. Our general impression is that roentgen-ray treatment is not so useful in toxic adenoma as in exophthalmic goiter, but that it may be of great advantage in rendering very toxic cases operable and in the treatment of cases that are inoperable for reasons other than the hyperthyroidism."

Urology

A. J. Crowell, M. D.,

Pain due to pathological conditions in the Genito-Urinary Tract is often misleading and the location of the lesion is frequently difficult to ascertain. This is especially true in cases of kidney pain of long standing.

We shall confine this brief to a study of pain in the kidney region as a result of pathology in the ureter, kidney or perinephritic tissue. Pain here is produced by some stimulation of the sensory nerve supply of the kidney and may be divided into the inflammatory and non-inflammatory types. The inflammatory type is constant and is increased by palpation and percussion. The non-inflammatory type is more sudden in onset and disappears more suddenly than that due to infection.

In acute inflammatory conditions causing pain, the patient is made more comfortable by lying on the opposite side and on the affected side when due to non-inflammatory conditions—such as that produced by kinked ureter or ureteral stone impaction. The inflammatory type is increased more by deep breathing than by motion. That due to congestion is better in the morning and worse in the evening. It is not eased by fixation.

As a rule there is no difficulty in differentiating between pain produced by infection and that caused by ureteral occlusion but careful study is always necessary to ascertain the etiological factor back of either. A negative urine does not mean that there is no kidney or ureter pathology.

We are not always justifiable in making a negative urologic diagnosis in cases of pain in the kidney region when a negative urinalysis is reported from the laboratory. Chronic kidney pain means pathology and we should not be satisfied until we find the pathological condition causing it.

Two patients illustrating this fact were examined at our clinic quite recently who had definite kidney lesions with a perfectly negative urine. One of them had consulted the leading urologists and surgeons of the Carolinas and Georgia on account of a severe pain in the urethra and had been operated upon twice for a caruncle without relief. A careful study of her condition revealed a slight nephroptosis on the right side with multiple ureteral kinks and dilated ureter. A diagnosis of neurosis on obtaining a negative urine from each kidney in this case would have been a great mistake.

The other patient was a lady whose uterus had been removed for fibroid and a second operation a year or so later for adhesions resulting in abdominal and back pains, without relief. A third operation was done to correct a bad cys-

tocele and rectocele as well as to repair a ventral hernia in the hope that relief from pain in the back and left side might be obtained; but all without avail. It was decided that a negative bladder urine was not sufficient evidence that there was no kidney pathology on that side and we proceeded to make a thorough urological investigation. This revealed a markedly displaced left ureter, resulting in ureteral obstruction and considerable hydronephrosis on that side. This case will be studied further and probably a retention catheter left in for several days in order to dilate the ureter to obtain better drainage and thus relieve pain.

Pain in perinephritis is severe and located in the lumbar region. If the lumbar plexus of nerves is involved, the pain is referred to the knee or lower thigh. If the infection is located at the upper pole of the kidney, the intercostal nerves are involved and the pain is referred to the area of their distribution. The pain in perinephritic infection is severe and associated with oedema. In perinephritic infection, pressure or percussion in the back causes considerable pain while pressure in front causes more pain in suppurating conditions of the kidney.

Pain is present in the terminal stages of tuberculosis of the kidney and is associated with frequency of urination. This occurs before and after urination.

Pain is present in about 75 per cent of the cases of pyelitis and is constant. Renal calculus, as a rule, does not produce pain unless blocking of the ureter occurs, or is accompanied with pelvic infection. It is unilateral and radiates to the crest of the ilium, anterior abdominal wall, groin, and testicle on the same side. Pain in the urethra is often the only symptom obtainable of pathology in the kidney or ureter.

News Items

Dr. W. E. Erwin, of York, South Carolina, celebrated his eighty-eighth birthday on the 21st of November. A dispatch to the Charlotte Observer concerning Dr. Erwin carries a story of such genuine interest that it is here reproduced entire: Dr. W. E. Erwin, the oldest white man in the town of York, Confederate veteran, gentleman of the old school, celebrated his eighty-eighth birthday Friday. The passing of this advanced milestone by Dr. Erwin, who is one of York's most highly esteemed citizens, was an event of interest to the entire town, every one wishing him many returns of his natal day and many expressing the hope that he will reach the century mark and keep on going.

His eighty-eighth birthday finds Doctor Erwin in good health, excellent spirits and with an active mind and boy. The passing years have wrought but little change in him and he is today the same affable, unassuming gentleman, the same neatly dressed figure, with a black suit, derby and walking stick, that hundreds of York citizens, themselves showing silver hairs, remember from the days of their youth. Doctor Erwin reads without glasses, has an erect form, sprightly carriage and other characteristics that belie his age.

He served gallantly under the Stars and Bars during the stirring drama of the 60's and lost his right foot while wearing the grey. This misfortune befell him at historic Battery Wagner, one of the defenses of Charleston harbor, August 26, 1863. During a fierce fight attack in which Federal landing force stormed the rifle pits, a shell from one of the supporting warships of the enemy amputated his right foot at the ankle.

Doctor Erwin had just located in Arkansas and begun the practice of medicine when the booming of the guns at Fort Sumter called him back to his native state. He was graduated from the

South Carolina Medical college in Charleston in 1860, on the very eve of the great conflict, and prior to this had given up his medical studies in Philadelphia because of the uncongenial atmosphere there in that period of strife and bitterness that preceded the breaking out of hostilities.

Full of fighting ardor, when the war broke out he entered the army not as a surgeon but as a man with a gun, and after seven months' service in Virginia was appointed by Governor Pickens a first lieutenant in the first regiment, South Carolina artillery, known as the "regulars." It was while a member of this command that he received the wound that terminated his career as a soldier.

After attending the Southern Medical Association Meeting in New Orleans Dr. Tom A. Williams is spending the winter in Miami, Fla., and will not return to Washington until April 1st. He has taken into association Dr. Kenneth W. Kinney of Calverton Apt., who will be in sole charge of the work until then.

Dr. J. P. Matheson, prominent specialist and founder of the Charlotte Eye, Ear and Throat Hospital, was initiated into the Phi Beta Kappa Fraternity at Davidson College recently. Dr. Matheson is of the class of '94, and the election to this society, one of the highest scholastic honors among American universities and colleges, is a recognition of his notable achievements in his specialty. A great honor is worthily bestowed.

Dr. Kelly is a native of Carthage, and this was his first visit to his home state in some time. He has enjoyed a meteoric rise in the profession. He was graduated from the Maryland College of

Pharmacy in 1900 with high honors and then entered the manufacturing end of the drug business. He has been connected with the Maryland School of Pharmacy since 1903, being appointed dean in 1918. He has long been prominently identified with the American Pharmaceutical association, being at present its treasurer.

Dr. William Francis Martin has returned to his home in Charlotte after three weeks spent in New York and Baltimore, attending clinics.

Among Charlotte physicians attending the meeting of the Southern Medical Association were Doctors L. C. Todd, J. A. Elliott, Raymond Thompson, John R. Ashe, and Myers Hunter. Dr. J. M. Pressley, of Belmont, was a member of the party.

Dr. Parks M. King was elected president of the Mecklenburg Medical Society at its last meeting, Dr. Lucius G. Gage, vice-president, and Dr. John P. Kennedy re-elected secretary and treasurer. The retiring president, Dr. John Q. Myers, made an unusually interesting address on the occasion.

At the recent meeting of the Southern Medical Association in New Orleans, Dr. Raymond Thompson was elected secretary of the Urological section of the Association.

The Franklin County Medical Association at their last meeting elected as president Dr. H. H. Johnson, and Dr. S. P. Burt, of Louisburg, secretary and treasurer.

The Southern Surgical Association met in its 37th annual convention at Charleston, South Carolina, Dr. LeGrande Guerry, of Columbia, presiding December 9th and 10th.

Dr. Irvin Abell, of Louisville, Kentucky, was elected president, Dr. Stephen H. Watts, of Charlottesville, Va., vice-president, and Dr. Hubert A. Royster, of Raleigh, North Carolina, re-elected secretary and treasurer.

Dr. R. L. Gibbon, of Charlotte, attended the Southern Surgical Association recently held at Charleston.

Dr. J. Allison Hodges, who has been ill for some days, is reported, as the Journal goes to press, as being slightly improved. He is at the Stuart Circle Hospital in Richmond, suffering from severe heart trouble.

Lumberton, North Carolina, has completed plans for a hospital to replace that recently destroyed by fire. It will be called the Thompson Memorial Hospital, will be fire-proof, and will be built at an expenditure of a minimum of \$50,000.

Dr. and Mrs. William A. Graham of Charlotte announce the birth of a daughter, November 25th.

A recent visitor to the University of North Carolina was Dr. Evander Francis Kelly, dean of the school of pharmacy in the University of Maryland. While there he addressed the University branch of the American Pharmaceutical Association.

Dr. E. M. Yount, Statesville, age 49, died in a Charlotte hospital November 19th, 1924.

Dr. Yount was a native of Catawba County, a son of the late Dr. D. Mc Yount. He was an alumna of Davidson College, and Johns Hopkins University.

Through his death Statesville has lost one of her most prominent and beloved physicians.

Dr. Zeran L. Merritt, senior interne of the James Walker Memorial Hospital at Wilmington, N. C., died December 5th at the home of his parents at Bolton. He was 26 years old, and a graduate of Trinity College, the University of North Carolina, and Tulane University.

Dr. R. R. Burgess, well known physician of Liberty, N. C., died December 5th at that place.

BOOK REVIEWS

ABT'S PEDIATRICS. Vol. IV. Edited by Isaac Abt, M.D., Chicago. W. B. Saunders Company.

This, the fourth volume of this monumental work is in keeping with its predecessors, being an exhaustive presentation of the accepted teaching on Diseases of the Pleura, Lungs, Thorax, Circulation, Heart, Blood-Vessels, Blood, Endocrine organs, Spleen, Lymph-nodes, Kidney, Bladder, male and female Genitals. From the first chapter's discussion of the "Principles of Physics in Pleural Conditions" to that of the last on malformations of the genitals, fundamental scientific principles are applied.

The manner of dealing with the endocrines is especially to be commended for its sane conservatism. As regards the overwhelming majority of gland preparations the attitude is expressed by such terms as "still in the experimental stage," and the flat statement is made that, "A great deal more of clean cut organo-therapeutic experimentation is needed."

The work is authoritative, dependable, and practical in the best sense of that word.

ABT'S PEDIATRICS. Volume V. Edited by Isaac A. Abt, M.D., Chicago. W. B. Saunders Company.

This volume, just printed, gives about the same space to surgical as to medical diseases of infancy and childhood. The chapter dealing with the General Pathology of Bone in Children is a comprehensive discussion of the subject, laying special emphasis on the frequency of bone diseases in the young and the necessity for their prompt recognition and radical treatment in order that death or deformity may be averted. The reconstructive surgery of infantile paralysis is exhaustively dealt with.

Tuberculosis is deserving of more emphasis as a disease of the young. It is worth while to quote: "During these years we have learned:

1. That infection with this bacillus is much more prevalent, especially among children, than was once believed.
2. That not only the human, but also the bovine type of bacillus is pathogenic for man.
3. That the aspiration of bacilli, disseminated by tuberculosis patients is the most frequent mode of infection.
4. That the primary focus is usually found in the lung.
5. That rest, light, air and a carbohydrate-low diet are our chief therapeutic measures.

This disease is still rampant, in spite of these well-known facts, because:

1. Infants and young children are very susceptible.

2. Early diagnosis is different.
3. The sources of infection are manifold.
4. The cause is often chronic.
5. Specific prophylaxis and therapy are still unsuccessful."

It is refreshing to encounter an authoritative work which states that a diagnosis is difficult, without adding the words "to any one not an expert."

The colored illustrations of the skin test are lovely.

Under climatic treatment this is said "That tuberculosis is not a climatic problem is proven by the fact that in the Tyrol it shows a high and increasing mortality rate, while in the foggy British Isles the mortality is low and decreasing."

MATERIA MEDICA FOR NURSES, by A. L. Muirhead, M.D., Omaha, and Edith P. Brodie, A.B., R.N., St. Louis. C. V. Mosley Co.

Having ascertained that training schools for nurses in this country allow an average of twenty-four hours for materia medica in the entire course, a text-book is written in a compact form to correspond.

Much attention is paid to the different systems of weights and measures, not excepting the household equivalents.

Symptoms and treatment of both acute and chronic poisoning with the commoner drugs are stressed, and wisely so, for this is perhaps the greatest field of usefulness to the patient or to the community of a nurse's knowledge of materia medica.

INTERNAL MEDICINE FOR NURSES, by Clifford Bailey Farr, A.M., M.D., Philadelphia. Lea & Febiger.

It is a pleasure to review this book. The author's viewpoint is clear and inspiring. The preface alone is worth the reading of the entire work; and the text is worthy of the preface. "Chief emphasis is laid upon etiology (prophylaxis), course and symptoms; pathology, diagnosis and treatment are briefly discussed for information but not for guidance." It would be well to conclude every lecture to undergraduate nurses with the second paragraph of this quotation from the preface; and there is a second in the text which is like unto it. "Dr. Mills advises the nurse not to make the diagnosis of hysteria, and never to employ the term." It is far easier to call a case hysteria than to work out the real diagnosis. And the further we advance in medicine, the narrower the zone of functional nervous diseases contracts.

The book is written in a plain, direct style; illustrated, not profusely, but helpfully; deals instructively with vitamins, internal secre-

tions, immunity, vaccines, antitoxins and viruses; and keeps to the fore at all times the things in which a nurse should be instructed.

It is a work which can be unreservedly endorsed, not only for the nurse but as a reliable epitome for the physician.

ANESTHESIA FOR NURSES, by Colonel William Webster, D.S.O., M.D., C.M., Winnipeg, Canada. C. V. Mosby Co.

It might be wondered in what way an anesthesia for nurses would differ from any other work on the subject, inasmuch as many nurses actually administer anesthetics routinely and most of them off and on.

Dr. Webster explains that he is attempting to fill the need for a small book to be used as a text for those nurses, who, for various reasons, may be called on to administer anesthetics.

He advises those who expect to make the administration of anesthetics a life work to take a regular medical course.

Out of his abundant knowledge of chemistry, pathology and clinical anesthesia he has written a valuable book.

DIAGNOSIS AND TREATMENT OF RENAL DISEASES, by Hugh MacLean, M.D.D. Sc., London. Lea & Febiger.

The author is frank to admit that many of the problems of renal secretion are still unsolved, and even that "today we are in some respects less certain of the methods of renal secretion than we seemed to be some years ago." Such admissions augur well for rational dealing with the subject at hand; and further perusal bears out the augury. The results of much experimental work by the author and the conclusion therefrom are given.

An especially illuminating chapter is that dealing with the significance of albuminuria and casts. Most writers on renal disease in the past decade have rather avoided the subject.

Dr. MacLean carried out an investigation to ascertain whether soldiers suffering from albuminuria were more liable to suffer at a later period from nephritis than those not showing albumin. These results and conclusions were published by the Medical Research Council (British). The evidence "pointed strongly to the conclusion that albuminuria *per se* did not predispose to nephritis" and "It is now certain that albuminuria may be present in individuals up to 40 or 50 years of age, at any rate, without having any marked significance whatever." It is further stated that casts do not constitute proof that the patient has defective kidneys, that high blood urea may be present with healthy kidneys and that severe kidney disease may exist without albumin or casts appearing in the urine.

The phenolsulphonphthalein test is considered of value but with many qualifications.

The book is an exceedingly readable, interesting volume, written by a man of broad training and great experience, eager to discern the truth. It will serve as a valuable corrective to many mistaken generalizations.

HUMAN CONSTITUTION, by George Draper, M.D., New York. W. B. Saunders Company.

The study of the human constitution is assuredly an ambitious one. This volume aims to point out methods of study of man and his diseases as a part of the "natural history of *Homo Sapiens*," much more than usual attention being paid to morphology.

Personality studies are made under four heads, anatomic, physiologic, psychologic and immunologic. The details embrace a most minute investigation of the subject's self including responses to several gland extracts and two drugs. Much of his ancestry is gone into and practically everything in his personal history.

By correlating the histories and examination sheets in each of the divisions, the opinion is expressed that it is possible to understand much more of the form and function of mind and body, special strengths and weaknesses, and degree and kind of immunity.

As the author points out the method is a "new-old" rather than a new one, studying the individual as a whole, which was the method of our grandfathers in medicine, and has been largely supplanted by special investigations of widely varying value.

The work should exert a great influence for good in medicine by encouraging careful study of every patient, whether or not the carefully determined and recorded measurements and weights prove of great diagnostic or prognostic worth.

DEVELOPMENTAL ANATOMY, by Leslie Brainerd Arey, Chicago. W. B. Saunders Company.

"Developmental Anatomy" has an appeal which "embryology" has not. It brings to mind the idea of a continuous process, while the use of the more commonly used term suggests a sharp division between Embryology and Anatomy.

Emphasis is laid on the value of study of the lower forms of life, even to the uni-cellular organisms, not only for a sound understanding of the place of man in nature but as a means of studying such vitally important matters as fertilization and maturation, and of understanding and dealing with certain anomalies, tumors and other deviations from the normal.

The book is clearly written and follows a logical consecutive system, which will make it unusually valuable to the student of whatever age.

PRACTICE OF PEDIATRICS, by Charles Gilmore Kerley, M.D., and Gaylord Willis Groves, M.D., New York. W. B. Saunders Company.

This edition of Kerley keeps up the great reputation made by its predecessors. The discussion of Nutrition, Growth, Development is ample without being elaborate. The importance of vitamins is emphasized, but no claim made of understanding what they are.

"A weight chart with its colored **normal** line will not be found in this book, and physicians are advised against its use." The foregoing sentence alone constitutes a real reason for the volume's being. So much harm is done by slavish attempts to make children's weights agree exactly with this mythical "perfect normal," regardless of the size of parents, as to make it a serious question whether "baby shows" do more good than harm. One could not reasonably expect registered colts from Percherons, thoroughbreds, and Shetland ponies, to be of the same weight at the same age;

and, if this should happen to be the case it would constitute presumptive evidence of disease on the part of one or the other. The chapter on scarlet fever deals with this serious menace to children in a most comprehensive manner. All recent additions to our knowledge are clearly discussed.

Another feature to be specially commended grows out of the very definite plan throughout of describing adaptations suitable to the purses of parents in widely separated walks of life. It is an excellent manual on this important subject.

Miscellaneous

CLINICAL VERSUS EXPERIMENTAL ANASTOMOSIS OF THE HOLLOW VISCERA.

The experimental study made by Moses Behrend, William P. Belk and Clinton S. Herrman, Philadelphia (Journal A. M. A., Dec. 6, 1924), of certain fundamental principles dealing with the problems involved in the anastomosis of the hollow viscera, is briefly summarized as follows: Anatomically, the end-to-end anastomosis is the logical one. The lateral anastomosis has its field of usefulness. The ideal type of anastomosis is the aseptic method. Physiologically, clinically or experimentally, there was no difference between the circular or the lateral anastomosis. Macroscopically, we could find no relation between non-absorbable sutures and ulcer formation. Microscopically, the best healing was obtained from the all catgut sutures. In only one case was the chromic catgut persistent sixteen weeks after the experiment in which linen and catgut was used. The widest stoma is obtained after an all interrupted suture. There is little difference in the size of the stoma when a lock-stitch is used occasionally in all continuous suture.

CHLORIN IN RESPIRATORY DISEASES.

When the announcement first appeared in The Journal, last March, that Vedder and Sawyer of the Army Medical

Corps had been able to devise a method for administering chlorin in the treatment of respiratory diseases, which seemed to have a distinctly beneficial effect in this class of ailments, it was received with exceptional interest. This interest was stimulated, no doubt, by the fact that high officials of our government, including even the President of the United States had submitted to treatment by this method and had expressed satisfaction with the results. Immediately, individual physicians, as well as hospitals and health departments, undertook to test chlorin administration on a large scale, with a view to establishing finally its actual adequacy. In New York City, Health Commissioner Monaghan established two clinics under the direction of Dr. L. I. Harris, in charge of the Bureau of Preventable Diseases. These clinics began active work, June 1, and continued until August 1. The results of the experiment have just been made available through the health bulletin of the Department of Health of the City of New York. According to the report, only 6.5 per cent. of 506 persons with various respiratory diseases reported themselves as cured, in contrast to 71.4 per cent. of 931 patients reported cured in the original paper of Drs. Vedder and Sawyer. Fifty-three per cent. of the patients treated by the New York clinics reported improvement, but the physicians in charge do not attach much importance to such

reports, since it is well known that patients with minor respiratory infections tend to improve, within certain limitations, by the very nature of such diseases. As is mentioned, the report of the New York investigators concerns only acute cases, and the conclusion is that in such instances at least the claims are unjustified. Much has been said of the use of the method in whooping cough, but eighteen cases of this disease studied with twelve controls failed to show any appreciable advantage of the chlorin method of treatment over that previously used. The method was without apparent benefit in asthma and in hay-fever; indeed, three patients with asthma became decidedly worse under treatment. The results of this controlled investigation are, therefore, such as to deprecate definitely the claims originally made for the method by the Army medical investigators. The physician is confronted with a situation in which the original investigators, whose work seems to have been conducted in a scientific manner, report excellent results which other investigators working independently have failed to confirm. Obviously, the results of numerous investigations being made elsewhere must also be brought to light before any opinion is warranted as to the future of this method of treating disease. Certainly the individual physician who purchases such apparatus and uses it in his practice must do so with the distinct understanding that he is using an unestablished method.—*Jour. A. M. A.*, Dec. 6, 1924.

CHIROPRACTIC AND INFANTILE PARALYSIS.

Comes to the editorial desk a copy of the De Kalb (Ill.) Daily Chronicle for Oct. 25, 1924, containing a brief article, presumably an advertisement, although not so designated, on infantile paralysis. According to the information disseminated by the Chronicle, "infantile paralysis is the direct result of nerve impingement somewhere along the contour of the spinal column." The follows a description of the symptoms that may

develop with infantile paralysis, leading up to the suggestion:

"Should you notice any of these symptoms coming upon your child you should converse with a chiropractor immediately. He will adjust the segments of the spine and restore normal nerve supply to the part of the cord affected and reduce the inflammation before any damage has been done."

Presumably, the editor of the De Kalb Daily Chronicle would feel aggrieved if, in printing this stuff, he were accused of showing an almost criminal disregard of the public health. What would be thought of a newspaper that would urge parents who had children suffering from diphtheria, scarlet fever, smallpox or some virulent disease to take the child to a voodoo doctor or to pronounce incantations over the afflicted little one or to rely on the healing power of a horse-chestnut or a magic ring? Yet none of these suggestions is more iniquitous than that which would lead the public to believe that infantile paralysis is due to the impingement of spinal nerves and can be cured by chiropractic "adjustment."—*Jour. A. M. A.*, Nov. 8, 1924.

A MICROSCOPIC STUDY OF MERCURY ABSORPTION FROM THE SKIN.

Microscopic examination made by Karl G. Zwick, Cincinnati (*Journal A. M. A.*, Dec. 6, 1924), of intact animal skin, to which mercury, in the form of mercurial ointment, had been applied by inunction, established: 1. The presence of globules of mercury: (a) in the infundibula of the pilosebaceous follicles; (b) in the orifices and excretory ducts of the sebaceous glands. 2. The absence of globules of mercury: (a) in the intact epidermal layers that are not constituents of the integumentary appendages; (b) in the cutis vera. Microscopic findings lead Zwick to conclude that: 1. Percutaneous absorption of mercury, following inunction of animals with mercurial ointment, takes place preponderatingly from the material deposited in the pores, consisting of the orifices

of the hair follicles and of the excretory ducts of the sebaceous glands. 2. Percutaneous absorption of mercury is not materially influenced by removing from the intact skin the excess of mercurial ointment deposited on it during inunction, because mercury does not penetrate into or through the intact epidermis.

THE AMERICAN BOARD OF OTOLARYNGOLOGY.

The American Board of Otolaryngology was organized in Chicago on November 10. The following constitute the board of directors: Drs. Harris P. Mosher, Boston, president; Frank R. Spencer, Boulder, Colo., vice-president; Hanau W. Loeb, St. Louis, secretary and treasurer; Thomas E. Carmody, Denver; Joseph C. Beck, Chicago; Thomas H. Halstead, Syracuse, N. Y.; Robert C. Lynch, New Orleans; Burt R. Shurly, Detroit; Ross H. Skillern, Philadelphia; William P. Wherry, Omaha. The office of the Board is at 1402 South Grand Boulevard, St. Louis, Missouri. The board comprises representatives of the five national otolaryngologic associations; the American Otological Society, the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the American Academy of Ophthalmology and Otolaryngology and the Section of Laryngology, Otology and Rhinology of the American Medical Association. The object of the association is to elevate the standard of otolaryngology, to familiarize the public with its aims and ideals, to protect the public against unqualified practitioners, to receive applications for examination in otolaryngology, to conduct examinations of such applicants, to issue certificates of qualification in otolaryngology and to perform

such duties as will advance the cause of otolaryngology. The first examination will be held at the time of the meeting of the American Medical Association.

The Suprarenal Principle.

When the active principle of suprarenal glands was isolated for the first time—by Takamine in 1900—it was named Adrenalin, from the fact that the medullary portion of the suprarenal gland is properly known as the adrenal body. The history of suprarenal therapy has been written for the most part from experience with Adrenalin, and the majority of writers on the subject have given the product its proper name as designated by its discoverer well-nigh a quarter of a century ago.

There is now an Adrenalin family—in addition to the liquid in vials and ampoules: an ointment, a suppository, and an inhalant, all bearing the name and all depending upon the presence of Adrenalin in the formula for their efficacy.

The manufacturers, Parke, Davis & Co., announce that they have a booklet containing practical information on all the Adrenalin products, which they will be glad to send to any inquiring physician.

New York Skin and Cancer Hospital.

Alumni New York Skin and Cancer Hospital Graduates of this Post Graduate School are requested to send their present professional office address to the secretary of the reorganized Alumni Association, Dr. Herman Goodman, 15 Central Park West, New York City.

THE GORGAS MEMORIAL.

During the past year, throughout the United States, the work of organizing the Gorgas Memorial State Governing Committees has been progressing. In some states the response has been most enthusiastic, while in others considerable effort has been necessary to bring home to the doctors, the importance of this movement to them, individually and collectively. Inasmuch as the Gorgas Memorial is primarily a medical movement

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and as such must have the united support of the profession if it is to make the proper impression on the general public, we take this occasion to outline briefly the Gorgas plan and to request the co-operation of our colleagues in bringing to a successful issue, this national health program.

We are planning to establish a Memorial for our former chief, Major General William Crawford Gorgas, not of marble or bronze, but a permanent living organization in the form of a great health foundation typical of his work in research and curative medicine, that will unite laymen and doctors in an intelligent effort to obtain better personal health—a health guild that will be supported and directed by the representatives of curative medicine.

The Gorgas Memorial consists of two phases:

1. An Institute in Panama for research in tropical diseases.
2. A health educational program in the United States and other countries that wish to co-operate and participate in the movement.

We are living in an age when people are knocking at all doors of knowledge and demanding that they be admitted. In the field of medicine who are so well fitted to meet this demand as those actually engaged in the practice of medicine? The doctors have a far more interesting and important message to deliver than any other group.

In the United States today there is scarcely a community that has not its quota of irregular "medical practitioners," so called. In many states there are strong organizations of the representatives of the various cults, whose theo-

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ries are imposed upon an uninformed public. Public ignorance is encouraged by professional reticence and the result is the astounding growth of unscientific methods. If the profession is to maintain the high standing to which centuries of labor in behalf of suffering mankind entitles it, it is essential that a definite organized effort be made to familiarize the public with such facts as will impress upon it the importance of medicine's contributions to human welfare. A constant fund of proper health information through the newspapers, magazines, lectures, moving pictures and the radio furnished by medical men and women of known reputation and

standing, will direct the public to the proper source for medical advice and gradually eliminate the irregular practices constantly increasing.

One of the objects of the Gorgas Memorial is to furnish a channel through which this kind of information may be disseminated. It cannot be done by individual physicians. It must be conducted by a dignified, ethical organization, controlled by the medical profession. The name of Gorgas is synonymous with "better health." No more appropriate name could be adopted for a movement that has for its object, *the developmene of co-operation between the public and scientific medicine for the purpose of improving health conditions by implanting the idea in the mind of every individual that scientific medicine is the real authority in all health matters and as such should be recognized as the source of health instruction.*

Before we ask the public for financial and moral support, it is essential that the doctors of the country unite in support of this program. As a means to this end, Governing Committees are now in process of organization, on the basis of 100 members to every 1,000,000 population in each state. 75 per cent of the personnel of each Committee will consist of medical men and 25 per cent of influential laymen and women. The permanent activities of the organization will be supervised by these committees in their respective states, in co-operation with the National Executive Committees.

An organization cannot operate without funds. We are endeavoring to raise an endowment of \$5,000,000, the interest only of which will be utilized to carry on the work. The principal will be invested in trust securities and remain intact. None of the money thus obtained will be spent for buildings or equipment. The Republic of Panama has donated the site and guaranteed the initial buildings and equipment for the tropical research laboratories, in recognition of Gorgas' great work in Panama. Those invited to serve as Founder members of the State Governing Committees

are requested, as they accept membership on the Committee to subscribe \$100 to the Endowment Fund, payable within two years. Every individual on the State Committee is a contributing member. When the medical nucleus of the organization is complete, a general appeal for funds will be made to the public.

The American Medical Association at its recent meeting in Chicago, passed the following resolution:

"Resolved, That the House of Delegates of the American Medical Association, convinced of the great promise which the Gorgas Memorial contains of benefit to humanity through improved knowledge of preventive medicine and tropical disease, and of its peculiar adequacy, as a tribute to our great leader and sanitarian, recommend to the organized profession of the country, through its constituent state and county societies, the enthusiastic support of the project."

J. A. Witherspoon, Tennessee
Joseph Rilus Eastman, Indiana
Thomas Cullen, Maryland
W. H. Mayer, Pennsylvania
F. B. Lund, Massachusetts

The Memorial has also been endorsed by numerous other medical and civic organizations.

Every doctor is requested to take a personal interest in the Gorgas program and to see that his community is adequately represented on the State Governing Committee. Each County Society should appoint officially at least one of its members to serve on the State Committee. This is one foundation that is controlled by the practitioners of curative medicine and as such should be supported by every practicing physician. Let us pull together, "the doctor for the doctor."

Frank Billings, Gilbert Fitz-Patrick, Seale Harris, W. H. G. Logan, Samuel J. Mixer, G. H. de Schweinitz, Rear Admiral E. R. Stitt, George Crile, William D. Haggard, Franklin Martin, William J. Mayo, Stuart McGuire, Ernst A. Sommer, Ray Lyman Wilbur, Surgeon General Hugh S. Cumming, Major General Merritte W. Ireland, C. Jeff Miller,

Brigadier General Robert E. Noble, George David Stewart, Hugh Young, Medical Members, Board of Directors Memorial Institute. Executive Offices: Chicago, Illinois.

Officers and lay members, Board of Directors: President Calvin Coolidge, Honorary President; Franklin Martin, Vice President; George M. Reynolds,

Treasurer; W. J. Sennett, Asst. Treasurer; Silas Strawn, Attorney; Honorable R. J. Alfaro, Brigadier General Charles G. Dawes, Bernard Baruch, Tyson Dines, Samuel Gompers, W. P. G. Harding, Judge John Bassett Moore, Adolph S. Ochs, Pres. Beliasario Porras, Panama; Leo S. Rowe, Fred W. Upham.

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Medical Interne (Psychiatric)

Applications for medical interne (psychiatric) will be later as received until June 30, 1925. The examination is to fill vacancies in Saint Elizabeths Hospital, Washington, D. C., at an entrance salary of \$1,860 a year.

Applicants must have been graduated from a recognized medical college or be senior students in such an institution, and furnish proof of graduation within

eight months from the date of making oath to the application. Applicants must not have been graduated prior to the year 1920 unless they have been continuously in hospital, laboratory, or research work along the lines of neurology or psychiatry since graduation.

Competitors will not be required to report for examination at any place, but will be rated on their general education, technical training, and experience.

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Meeting of Tri-State Medical Association

The twenty-seventh annual session of the Tri-State Medical Association of the Carolinas and Virginia will assemble in the Auditorium of The Jefferson Hotel in Richmond on Wednesday, February 18, 1925, at ten o'clock in the morning. The meeting will cover that day and the following day, and there will probably be a brief session on Wednesday evening. Many doctors believe, and with adequate reason, that Richmond is the best medical convention-city in the South. Why not? In that city many of the South's doctors got their medical education; to that city many of them send their patients for reference to specialists; and all people look upon Richmond as hallowed by the sacrifices of a great war.

The Tri-State Medical Association believes that it has succeeded in becoming a pure medical society. It has no other concern than the dissemination of knowledge designed to be useful in the prevention and the cure of disease. It is concerned only with the promotion and the preservation of good health. It has no interest in politics, medical or otherwise.

At the last meeting of the Association a resolution was adopted by which the number of papers on the program is to be limited to twenty. Surely this number of papers will give ample time for discussion. The Virginia members of the Association are withholding requests for a place on the program until the members from the Carolinas have had an opportunity to submit their titles.

The City of Richmond will welcome you. Bring your medical neighbor.

F. H. McLEOD, President,
Florence, South Carolina.

J. K. HALL, Secretary-Treasurer.
Richmond, Virginia.

ERRATA.

Page	Col.	Line					
				culous";			
499	2	5:	"Culture" should be "cultures";	509	1	1:	"neck" should be "necks";
500	1	6:	"is" should be "in";		1	10:	"baccillus" should be "bacillus";
503	1	21:	"and" should be "at";	515	1	4:	After neck "this" is omitted;
503	1	5	from bottom: Period omitted, and	517	2	5	from bottom: should read
			"i" should be "I."				"proximal 8 ft.";
504	1	23:	"thousandedeth" should be	532	2	7	from bottom: "foraminae"
			"thousandth";				should be "formina".
508	Title:		"tuberculosis" should be "tuber-	Also few transpositions and omissions of			
			vowels.				

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